Authorization for Credit Card Transactions

Department of Homeland Security

Form G-1450

How To Fill Out Form G-1450

1. Type or print legibly in black ink.
2. Complete the "**Applicant's/Petitioner's/Requester's Information**," "**Credit Card Billing Information**," and "**Credit Card Information**" sections and sign the authorization. **NOTE:** The credit card must be issued by a U.S. bank.
3. Place your Form G-1450 ON TOP of your application, petition, or request package.

NOTE: Failure to provide the requested information may result in DHS and your financial institution not accepting the payment. DHS cannot process credit card payments without an authorized signature.

NOTE: Please see the USCIS Form G-1450 website for additional information.

We recommend that you print or save a copy of your completed Form G-1450 to review in the future and for your records.

By completing this transaction, you agree that you have paid for a government service and that the filing fee, biometric services fee and all related financial transactions are final and not refundable, regardless of any action DHS takes on an application, petition, or request. You must submit all fees in the exact amounts. DHS will charge your credit card up to the amount you authorize below.

Please refer to the form(s) you are filing for additional information, or you may call the USCIS Customer Contact number at **1-800-375-5283**. For TTY (deaf or hard of hearing) call: **1-800-767-1833**.

Applicant's/Petitioner's/Requester's Information (Full Legal Name)		
Given Name (First Name) Guilherme	Middle Name (if any)	Family Name (Last Name) PEREIRA DA SILVA ALVES
Credit Card Billing Information (Credit Card Holder's Name as it Appears on the Card)		
Given Name (First Name) Otavio	Middle Name (if any) H	Family Name (Last Name) SILVA
Credit Card Holder's Billing Address:		
Street Number and Name 5051 La Jolla Blvd	Apt. Ste. Flr. ☒ ☐ ☐	Number 202
City or Town San Diego	State CA	ZIP Code 92109
Credit Card Holder's Signature and Contact Information:		
Credit Card Holder's Signature		
Credit Card Holder's Daytime Telephone Number 5102419336	Credit Card Holder's Email Address otavio@yousalaw.com	
Credit Card Information		
Credit Card Number	**Credit Card Type:** ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover	Authorized Payment Amount $ 715.00
Credit Card Expiration Date (mm/yyyy) CVV Code		

Authorization for Credit Card Transactions

Department of Homeland Security

Form G-1450

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Applicant's/Petitioner's/Requester's Information (Full Legal Name)		
Given Name (First Name) Guilherme	Middle Name (if any)	Family Name (Last Name) PEREIRA DA SILVA ALVES
Credit Card Billing Information (Credit Card Holder's Name as it Appears on the Card)		
Given Name (First Name) Otavio	Middle Name (if any) H	Family Name (Last Name) SILVA
Credit Card Holder's Billing Address:		
Street Number and Name 5051 La Jolla Blvd	Apt. Ste. Flr. ☒ ☐ ☐	Number 202
City or Town San Diego	State CA	ZIP Code 92109
Credit Card Holder's Signature and Contact Information:		
Credit Card Holder's Signature		
Credit Card Holder's Daytime Telephone Number 5102419336	Credit Card Holder's Email Address otavio@yousalaw.com	
Credit Card Information		
Credit Card Number	**Credit Card Type:** ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover	Authorized Payment Amount $ 300.00
Credit Card Expiration Date (mm/yyyy) CVV Code		

YOUSA
LAW FIRM

EB-2 IMMIGRANT PETITION
WITH REQUEST FOR A NATIONAL INTEREST WAIVER

Petitioner: ALVES, Guilherme Pereira da Silva

San Diego, CA - PO Box 90487

TABLE OF CONTENTS

Petitioner: ALVES, Guilherme Pereira da Silva
Type of Petition: I-140, EB-2 National Interest Waiver
Classification Sought: Immigration and Nationality Act 203(b)(2)(B)

Forms	• Form G-1450 in the amount of $715 towards I-140 form filling fee • Form G-1450 in the amount of $300 towards Asylum Program Fee • Form G-1145 • Form G-28 • Form I-140 • ETA-9089
Petition Cover Letter	• Summary of Cover Letter • Petition Cover Letter • Exhibit List
Exhibit A	Resume
Exhibit B **ELIGIBILITY CRITERIA**	**Exceptional Ability:** **I. Official academic record showing that you have a degree, diploma, certificate, or similar award from a college, university, school, or other institution of learning relating to your area of exceptional ability:** • Diploma in Network Communications, Federal Institute of Education, Science and Technology of Goiás, Brazil, and corresponding translation • Postgraduate Certificate in Computer Networks and Systems Security, Federal University of Goiás, Brazil, and corresponding translation • Academic Credential Evaluation of Guilherme Pereira da Silva Alves **II. Letters documenting at least 10 years of full-time experience in your occupation:** • Letter of Experience – Gusto Canada ULC (2026 to Present) • Letter of Experience – Deel Canada Services Inc. (2024 to 2026) • Letter of Experience – Tophatmonocle Corp. (2021 to 2024) • Letter of Experience – Bold Commerce Inc. (2019 to 2021) • Letter of Experience – Soluti (2015 to 2019) • Letter of Experience – Indra (2013 to 2015) **III. Professional certification:** • Zend Certified Engineer (PHP) Certification, 2017 **IV. Evidence of high salary or other significantly high remuneration:** • Canada Revenue Agency Notice of Reassessment for the 2025 Tax Year • Gusto Canada ULC Pay Statements

	• Comparable Compensation from the Central Bank of Brazil **V. Membership in professional association(s):** • Association for Computing Machinery (ACM) Membership Certificate **VI. Recognition for achievements and significant contributions to the industry or field by peers, government entities, or professional or business organizations:** • Recommendation Letter Mr. Jeremy Heiler, Engineering Manager, Business Compliance Engineering, Gusto • Recommendation Letter Mr. Reinaldo Borges de Freitas, Chief Technology Officer, Soluti Digital • Recommendation Letter Mr. Sean Michael Fahey, Senior Engineering Manager, Top Hat • Recommendation Letter Mr. Gord Currie, former Senior Software Engineering Manager, Axon Public Safety • Recommendation Letter Mr. Dex Getson, Software Development Manager, • Bold Commerce • Recommendation Letter Ms. Renee Fisher, Vice President of Engineering, Coconut Software • Recommendation Letter Mr. Adrian Gazzoli, Group Product Manager, Top Hat • Speaker Certificate – "Distance Learning Through Videoconferencing in Moodle," 5th Latin American Free Software Conference, Latinoware 2008 • Speaker Certificate – "Developing Institutional Systems with Zend Framework and jQuery," 6th Latin American Free Software Conference, Latinoware 2009 • Speaker Certificate – "Dependency Management with Composer," Latin American Free Software Installation Festival (FLISOL), 2013 • Speaker Certificate – CPD Edition 2020, Campus Party Brazil
<u>Exhibit C</u> **NATIONAL INTEREST WAIVER**	**C.I – First Prong – Substantial Merit and National Importance:** • Business Plan – Vertex Digital Systems LLC • Research and Government Initiatives Supporting the Business **C.II – Second Prong – Well-Positioned to Advance the Proposed Endeavor** • All Documents Included in Exhibit B • **<u>Financial Feasibility:</u>** • CIBC Savings Account Statement, March 2026 • IA Financial Group TFSA Investment Statement, April 2026 Currency Conversion from the Central Bank of Brazil

<u>Exhibit D</u> **PERSONAL DOCUMENTS**	• Birth Certificate and Corresponding Translation • Passport Biographic Page • Marriage Certificate and Corresponding Translation • Derivative's Birth Certificates and Corresponding Translations • Derivative's Passport Biographic Pages

+1 510 714 0100
+1 415 425 2508
PO BOX 90487/
ZIP CODE 92169

e-Notification of Application/Petition Acceptance

Department of Homeland Security
U.S. Citizenship and Immigration Services

USCIS
Form G-1145

What Is the Purpose of This Form?

Use this form to request an electronic notification (e-Notification) when U.S. Citizenship and Immigration Services accepts your immigration application. This service is available for applications filed at a USCIS Lockbox facility.

General Information

Complete the information below and clip this form to the first page of your application package. You will receive one e-mail and/or text message for each form you are filing.

We will send the e-Notification within 24 hours after we accept your application. Domestic customers will receive an e-mail and/or text message; overseas customers will only receive an e-mail. Undeliverable e-Notifications cannot be resent.

The e-mail or text message will display your receipt number and tell you how to get updated case status information. It will not include any personal information. The e-Notification does not grant any type of status or benefit; rather it is provided as a convenience to customers.

USCIS will also mail you a receipt notice (I-797C), which you will receive within 10 days after your application has been accepted; use this notice as proof of your pending application or petition.

USCIS Privacy Act Statement

AUTHORITIES: The information requested on this form is collected pursuant to section 103(a) of the Immigration and Nationality Act, as amended INA section 101, et seq.

PURPOSE: The primary purpose for providing the information on this form is to request an electronic notification when USCIS accepts immigration form. The information you provide will be used to send you a text and/or email message.

DISCLOSURE: The information you provide is voluntary. However, failure to provide the requested information may prevent USCIS from providing you a text and/or email message receipting your immigration form.

ROUTINE USES: The information provided on this form will be used by and disclosed to DHS personnel and contractors in accordance with approved routine uses, as described in the associated published system of records notices [**DHS/USCIS-007 - Benefits Information System and DHS/USCIS-001 - Alien File (A-File) and Central Index System (CIS)**, which can be found at www.dhs.gov/privacy]. The information may also be made available, as appropriate for law enforcement purposes or in the interest of national security.

Complete this form and clip it on top of the first page of your immigration form(s).

Applicant/Petitioner Full Last Name	Applicant/Petitioner Full First Name	Applicant/Petitioner Full Middle Name
PEREIRA DA SILVA ALVES	**Guilherme**	**N/A**

Email Address	Mobile Phone Number (Text Message)
guilhermepsa@gmail.com	**N/A**

Notice of Entry of Appearance as Attorney or Accredited Representative

Department of Homeland Security

DHS Form G-28
OMB No. 1615-0105
Expires 05/31/2021

Part 1. Information About Attorney or Accredited Representative

1. USCIS Online Account Number (if any)

► 0 0 7 4 9 2 6 2 5 4 3 8

Name of Attorney or Accredited Representative

2.a. Family Name (Last Name): HAVERROTH SILVA

2.b. Given Name (First Name): Otavio

2.c. Middle Name: N/A

Address of Attorney or Accredited Representative

3.a. Street Number and Name: P.O. Box 90487

3.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.c. City or Town: San Diego

3.d. State: CA **3.e.** ZIP Code: 92169

3.f. Province: N/A

3.g. Postal Code: N/A

3.h. Country: USA

Contact Information of Attorney or Accredited Representative

4. Daytime Telephone Number: 5102419336

5. Mobile Telephone Number (if any): 5102419336

6. Email Address (if any): otavio@legalhs.com

7. Fax Number (if any): N/A

Part 2. Eligibility Information for Attorney or Accredited Representative

Select **all applicable** items.

1.a. ☒ I am an attorney eligible to practice law in, and a member in good standing of, the bar of the highest courts of the following states, possessions, territories, commonwealths, or the District of Columbia. If you need extra space to complete this section, use the space provided in **Part 6. Additional Information**.

Licensing Authority: California

1.b. Bar Number (if applicable): 343486

1.c. I (select **only one** box) ☒ am not ☐ am subject to any order suspending, enjoining, restraining, disbarring, or otherwise restricting me in the practice of law. If you are subject to any orders, use the space provided in **Part 6. Additional Information** to provide an explanation.

1.d. Name of Law Firm or Organization (if applicable): HS Law Corp

2.a. ☐ I am an accredited representative of the following qualified nonprofit religious, charitable, social service, or similar organization established in the United States and recognized by the Department of Justice in accordance with 8 CFR part 1292.

2.b. Name of Recognized Organization: N/A

2.c. Date of Accreditation (mm/dd/yyyy): N/A

3. ☐ I am associated with N/A, the attorney or accredited representative of record who previously filed Form G-28 in this case, and my appearance as an attorney or accredited representative for a limited purpose is at his or her request.

4.a. ☐ I am a law student or law graduate working under the direct supervision of the attorney or accredited representative of record on this form in accordance with the requirements in 8 CFR 292.1(a)(2).

4.b. Name of Law Student or Law Graduate: N/A

Part 3. Notice of Appearance as Attorney or Accredited Representative

If you need extra space to complete this section, use the space provided in **Part 6. Additional Information**.

This appearance relates to immigration matters before (select **only one** box):

1.a. ☒ U.S. Citizenship and Immigration Services (USCIS)

1.b. List the form numbers or specific matter in which appearance is entered.

I-140 ETA-9089

2.a. ☐ U.S. Immigration and Customs Enforcement (ICE)

2.b. List the specific matter in which appearance is entered.

N/A

3.a. ☐ U.S. Customs and Border Protection (CBP)

3.b. List the specific matter in which appearance is entered.

N/A

4. Receipt Number (if any)

► N/A

5. I enter my appearance as an attorney or accredited representative at the request of the (select **only one** box):

☐ Applicant ☒ Petitioner ☐ Requestor
☐ Beneficiary/Derivative ☐ Respondent (ICE, CBP)

Information About Client (Applicant, Petitioner, Requestor, Beneficiary or Derivative, Respondent, or Authorized Signatory for an Entity)

6.a. Family Name (Last Name) PEREIRA DA SILVA ALVES

6.b. Given Name (First Name) Guilherme

6.c. Middle Name N/A

7.a. Name of Entity (if applicable)

N/A

7.b. Title of Authorized Signatory for Entity (if applicable)

N/A

8. Client's USCIS Online Account Number (if any)

► N/A

9. Client's Alien Registration Number (A-Number) (if any)

► A- N/A

Client's Contact Information

10. Daytime Telephone Number

+1 204 333-3532

11. Mobile Telephone Number (if any)

+1 204 333-3532

12. Email Address (if any)

guilhermepsa@gmail.com

Mailing Address of Client

NOTE: Provide the client's mailing address. **Do not** provide the business mailing address of the attorney or accredited representative **unless** it serves as the safe mailing address on the application or petition being filed with this Form G-28.

13.a. Street Number and Name P.O. Box 90487

13.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

13.c. City or Town San Diego

13.d. State CA **13.e.** ZIP Code 92169

13.f. Province N/A

13.g. Postal Code N/A

13.h. Country

USA

Part 4. Client's Consent to Representation and Signature

Consent to Representation and Release of Information

I have requested the representation of and consented to being represented by the attorney or accredited representative named in **Part 1.** of this form. According to the Privacy Act of 1974 and U.S. Department of Homeland Security (DHS) policy, I also consent to the disclosure to the named attorney or accredited representative of any records pertaining to me that appear in any system of records of USCIS, ICE, or CBP.

Part 4. Client's Consent to Representation and Signature (continued)

Options Regarding Receipt of USCIS Notices and Documents

USCIS will send notices to both a represented party (the client) and his, her, or its attorney or accredited representative either through mail or electronic delivery. USCIS will send all secure identity documents and Travel Documents to the client's U.S. mailing address.

If you want to have notices and/or secure identity documents sent to your attorney or accredited representative of record rather than to you, please select **all applicable** items below. You may change these elections through written notice to USCIS.

1.a. ☒ I request that USCIS send original notices on an application or petition to the business address of my attorney or accredited representative as listed in this form.

1.b. ☒ I request that USCIS send any secure identity document (Permanent Resident Card, Employment Authorization Document, or Travel Document) that I receive to the U.S. business address of my attorney or accredited representative (or to a designated military or diplomatic address in a foreign country (if permitted)).

NOTE: If your notice contains Form I-94, Arrival-Departure Record, USCIS will send the notice to the U.S. business address of your attorney or accredited representative. If you would rather have your Form I-94 sent directly to you, select **Item Number 1.c.**

1.c. ☐ I request that USCIS send my notice containing Form I-94 to me at my U.S. mailing address.

Signature of Client or Authorized Signatory for an Entity

2.a. Signature of Client or Authorized Signatory for an Entity

➡ Guilherme Pereira da Silva Alves

2.b. Date of Signature (mm/dd/yyyy) 10/01/2026

Part 5. Signature of Attorney or Accredited Representative

I have read and understand the regulations and conditions contained in 8 CFR 103.2 and 292 governing appearances and representation before DHS. I declare under penalty of perjury under the laws of the United States that the information I have provided on this form is true and correct.

1. a. Signature of Attorney or Accredited Representative

1.b. Date of Signature (mm/dd/yyyy) 10/01/2026

2.a. Signature of Law Student or Law Graduate

N/A

2.b. Date of Signature (mm/dd/yyyy) N/A

Part 6. Additional Information

If you need extra space to provide any additional information within this form, use the space below. If you need more space than what is provided, you may make copies of this page to complete and file with this form or attach a separate sheet of paper. Type or print your name at the top of each sheet; indicate the **Page Number**, **Part Number**, and **Item Number** to which your answer refers; and sign and date each sheet.

1.a Family Name (Last Name): PEREIRA DA SILVA ALVES

1.b. Given Name (First Name): Guilherme

1.c. Middle Name: N/A

2.a. Page Number: N/A **2.b.** Part Number: N/A **2.c.** Item Number: N/A

2.d. N/A

3.a. Page Number: N/A **3.b.** Part Number: N/A **3.c.** Item Number: N/A

3.d. N/A

4.a. Page Number: N/A **4.b.** Part Number: N/A **4.c.** Item Number: N/A

4.d. N/A

5.a. Page Number: N/A **5.b.** Part Number: N/A **5.c.** Item Number: N/A

5.d. N/A

6.a. Page Number: N/A **6.b.** Part Number: N/A **6.c.** Item Number: N/A

6.d. N/A

Immigrant Petition for Alien Workers

Department of Homeland Security
U.S. Citizenship and Immigration Services

USCIS
Form I-140
OMB No. 1615-0015
Expires 02/28/2027

For USCIS Use Only	Fee Stamp	Priority Date	Consulate	Action Block

Classification

- ☐ 203(b)(1)(A) Alien of Extraordinary Ability
- ☐ 203(b)(1)(B) Outstanding Professor or Researcher
- ☐ 203(b)(1)(C) Multinational Executive or Manager
- ☐ 203(b)(2) Member of Professions with Advanced Degree/Exceptional Ability
- ☐ 203(b)(3)(A)(i) Skilled Worker
- ☐ 203(b)(3)(A)(ii) Professional
- ☐ 203(b)(3)(A)(iii) Other Worker

Certification

- ☐ National Interest Waiver (NIW)
- ☐ Schedule A, Group I
- ☐ Schedule A, Group II

Remarks

To be completed by an Attorney or Accredited Representative (if any).	☒ Select this box if Form G-28 or Form G-28I is attached.	Attorney State Bar Number (if applicable)	Attorney or Accredited Representative USCIS Online Account Number (if any)
		343486	007492625438

► **START HERE - Type or print in black ink.**

Part 1. Information About the Person or Organization Filing This Petition

If an individual is filing this petition, answer **Item Numbers 1.a. - 1.c.** If a company or organization is filing this petition, answer **Item Number 2.**

1.a. Family Name (Last Name): PEREIRA DA SILVA ALVES

1.b. Given Name (First Name): Guilherme

1.c. Middle Name: N/A

2. Company or Organization Name: N/A

Mailing Address

3.a. In Care Of Name: Otavio Haverroth Silva

3.b. Street Number and Name: PO Box 90487

3.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.d. City or Town: San Diego

3.e. State: CA **3.f.** ZIP Code: 92169

3.g. Province: N/A

3.h. Postal Code: N/A

3.i. Country: USA

Other Information

4. IRS Employer Identification Number (EIN) ► N/A

5. Are you a nonprofit organized as tax exempt or a governmental research organization? ☐ Yes ☒ No

6. Do you currently employ a total of 25 or fewer full-time equivalent employees in the United States, including all affiliates or subsidiaries of this company/organization? ☒ Yes ☐ No

7. U.S. Social Security Number (SSN) (if any) ► N/A

8. USCIS Online Account Number (if any) ► N/A

Part 2. Petition Type

This petition is being filed for (select **only one** box):

1.a. ☐ An alien of extraordinary ability.

1.b. ☐ An outstanding professor or researcher.

1.c. ☐ A multinational executive or manager.

1.d. ☐ A member of the professions holding an advanced degree or an alien of exceptional ability (who is **NOT** seeking a National Interest Waiver (NIW)).

1.e. ☐ A professional (at a minimum, possessing a bachelor's degree or a foreign degree equivalent to a U.S. bachelor's degree).

Part 2. Petition Type (continued)

1.f. ☐ A skilled worker (requiring at least two years of specialized training or experience).

1.g. ☐ Any other worker (requiring less than two years of training or experience).

1.h. ☒ An alien applying for an NIW (who **IS** a member of the professions holding an advanced degree or an alien of exceptional ability).

This petition is being filed (select **only one** box):

2.a. ☐ To amend a previously filed petition.

Previous Petition Receipt Number

► N/A

2.b. ☐ For the Schedule A, Group I or II designation.

Part 3. Information About the Person for Whom You Are Filing

1.a. Family Name (Last Name): PEREIRA DA SILVA ALVES

1.b. Given Name (First Name): Guilherme

1.c. Middle Name: N/A

Mailing Address

2.a. In Care Of Name: Otavio Haverroth Silva

2.b. Street Number and Name: PO Box 90487

2.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

2.d. City or Town: San Diego

2.e. State: CA **2.f.** ZIP Code: 92169

2.g. Province: N/A

2.h. Postal Code: N/A

2.i. Country: USA

Other Information

3. Date of Birth (mm/dd/yyyy): 01/08/1987

4. City/Town/Village of Birth: Goiania

5. State or Province of Birth: Goias

6. Country of Birth: Brazil

7. Country of Citizenship or Nationality: Canada

8. Alien Registration Number (A-Number) (if any)

► A- N/A

9. U.S. SSN (if any) ► N/A

Information About His or Her Last Arrival in the United States

If the person for whom you are filing is in the United States, provide the following information.

10. Date of Last Arrival (mm/dd/yyyy): N/A

11.a. Form I-94 Arrival-Departure Record Number

► N/A

11.b. Expiration Date of Authorized Stay Shown on Form I-94 (mm/dd/yyyy): N/A

11.c. Status on Form I-94 (for example, class of admission, or paroled, if paroled): N/A

12. Passport Number: N/A

13. Travel Document Number: N/A

14. Country of Issuance for Passport or Travel Document: N/A

15. Expiration Date for Passport or Travel Document (mm/dd/yyyy): N/A

Part 4. Processing Information

Provide the following information for the person named in **Part 3.** (select **only one** box):

1.a. ☒ Alien will apply for a visa abroad at a U.S. Embassy or U.S. Consulate at:

1.b. City or Town: Montreal

1.c. Country: Canada

2.a. ☐ Alien is in the United States and will apply for adjustment of status to that of lawful permanent resident.

Part 4. Processing Information (continued)

2.b. Alien's current country of residence or, if now in the United States, last country of permanent residence abroad.

Canada

If you provided a United States address in **Part 3.**, provide the person's foreign address in **Item Numbers 3.a. - 3.f.**:

3.a. Street Number and Name: 361 Copperfield BLVD SE

3.b. ☐ Apt. ☐ Ste. ☐ Flr. N/A

3.c. City or Town: Calgary

3.d. Province: Alberta

3.e. Postal Code: T2Z 4C8

3.f. Country: Canada

If the person's native alphabet is other than Roman letters, type or print the person's foreign name and address in the native alphabet in **Item Numbers 4.a. - 5.g.**:

4.a. Family Name (Last Name): N/A

4.b. Given Name (First Name): N/A

4.c. Middle Name: N/A

Mailing Address

5.a. In Care Of Name: N/A

5.b. Street Number and Name: N/A

5.c. ☐ Apt. ☐ Ste. ☐ Flr. N/A

5.d. City or Town: N/A

5.e. Province: N/A

5.f. Postal Code: N/A

5.g. Country: N/A

If you answer "Yes" to **Item Numbers 6.a. - 10.**, provide the case number, office location, date of decision, and disposition of the decision in the space provided in **Part 11. Additional Information**.

6.a. Are you filing any other petitions or applications with this Form I-140? ☐ Yes ☒ No

6.b. If you answered "Yes" **to Item Number 6.a.**, select all applicable boxes:

☐ Form I-485

☐ Form I-131

☐ Form I-765

☐ Other (Provide an explanation in **Part 11. Additional Information**.)

7. Is the person for whom you are filing in removal proceedings? ☐ Yes ☒ No

8. Has any immigrant visa petition ever been filed by or on behalf of this person? ☐ Yes ☒ No

9. Are you filing this petition without an original labor certification because the original labor certification was previously submitted in support of another Form I-140? ☐ Yes ☒ No

10. If you are filing this petition without an original labor certification, are you requesting that U.S. Citizenship and Immigration Services (USCIS) request a duplicate labor certification from the Department of Labor (DOL)? ☐ Yes ☒ No

Part 5. Additional Information About the Petitioner

Type of petitioner (select **only one** box):

1.a. ☐ Employer

1.b. ☒ Self

1.c. ☐ Other (For example, Lawful Permanent Resident, U.S. citizen or any other person filing on behalf of the alien)

N/A

If a company or an organization is filing this petition, provide the following information:

2. Type of Business: N/A

3. Date Established (mm/dd/yyyy): N/A

4. Current Number of U.S. Employees: N/A

5. Gross Annual Income $ N/A

6. Net Annual Income $ N/A

7. NAICS Code ▶ N/A

8. Labor Certification DOL Case Number: N/A

Part 5. Additional Information About the Petitioner (continued)

9. Labor Certification DOL Filing Date (mm/dd/yyyy)

N/A

10. Labor Certification Expiration Date (mm/dd/yyyy)

N/A

If an individual is filing this petition, provide the following information.

11. Occupation

Software Engineer

12. Annual Income $ N/A

Part 6. Basic Information About the Proposed Employment

1. Job Title

General and Operations Managers

2. SOC Code ▶ 11 - 1021

3. Nontechnical Job Description

See page 8.

4. Is this a full-time position? ☒ Yes ☐ No

5. If the answer to **Item Number 4.** is "No," how many hours per week for the position?

N/A

6. Is this a permanent position? ☒ Yes ☐ No

7. Is this a new position? ☒ Yes ☐ No

8. Wages (Specify hour, week, month, or year):

$ 100,000.00 per year

Worksite Location

For **Item Numbers 9.a. - 9.e.**, provide the address where the person will work if different from the address provided in **Part 1.**

9.a. Street Number and Name: To be determined

9.b. ☐ Apt. ☐ Ste. ☐ Flr. To be determined

9.c. City or Town: Dallas

9.d. State: TX **9.e.** ZIP Code: To be determined

Part 7. Information About the Spouse and All Children of the Person for Whom You Are Filing

For **Part 7.**, provide information on the spouse and all children related to the individual for whom you are filing this petition. Also, note if the individual will apply for a visa abroad or adjustment of status as the dependent of the individual for whom the petition is filed. If you need extra space to provide information about additional family members, use the space provided in **Part 11. Additional Information**.

Person 1

1.a. Family Name (Last Name): RODRIGUES DE OLIVEIRA ALVES

1.b. Given Name (First Name): Renata

1.c. Middle Name: N/A

2. Date of Birth (mm/dd/yyyy): 12/02/1987

3. Country of Birth

Brazil

4. Relationship: Spouse

5. Is he or she applying for adjustment of status? ☐ Yes ☒ No

6. Is he or she applying for a visa abroad? ☒ Yes ☐ No

Person 2

7.a. Family Name (Last Name): OLIVEIRA ALVES

7.b. Given Name (First Name): Ethan

7.c. Middle Name: N/A

8. Date of Birth (mm/dd/yyyy): 09/16/2024

9. Country of Birth

Canada

10. Relationship: Son

11. Is he or she applying for adjustment of status? ☐ Yes ☒ No

12. Is he or she applying for a visa abroad? ☒ Yes ☐ No

Part 7. Information About Spouse and All Children of the Person for Whom You Are Filing (continued)

Person 3

13.a. Family Name (Last Name): OLIVEIRA ALVES

13.b. Given Name (First Name): Erick

13.c. Middle Name: N/A

14. Date of Birth (mm/dd/yyyy): 05/04/2020

15. Country of Birth: Canada

16. Relationship: Son

17. Is he or she applying for adjustment of status? ☐ Yes ☒ No

18. Is he or she applying for a visa abroad? ☒ Yes ☐ No

Person 4

19.a. Family Name (Last Name): N/A

19.b. Given Name (First Name): N/A

19.c. Middle Name: N/A

20. Date of Birth (mm/dd/yyyy): N/A

21. Country of Birth: N/A

22. Relationship: N/A

23. Is he or she applying for adjustment of status? ☐ Yes ☐ No

24. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 5

25.a. Family Name (Last Name): N/A

25.b. Given Name (First Name): N/A

25.c. Middle Name: N/A

26. Date of Birth (mm/dd/yyyy): N/A

27. Country of Birth: N/A

28. Relationship: N/A

29. Is he or she applying for adjustment of status? ☐ Yes ☐ No

30. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Person 6

31.a. Family Name (Last Name): N/A

31.b. Given Name (First Name): N/A

31.c. Middle Name: N/A

32. Date of Birth (mm/dd/yyyy): N/A

33. Country of Birth: N/A

34. Relationship: N/A

35. Is he or she applying for adjustment of status? ☐ Yes ☐ No

36. Is he or she applying for a visa abroad? ☐ Yes ☐ No

Part 8. Contact Information, Certification, and Signature of the Petitioner or Authorized Signatory

Petitioner or Authorized Signatory's Contact Information

1.a. Petitioner's or Authorized Signatory's Family Name (Last Name)
PEREIRA DA SILVA ALVES

1.b. Petitioner's or Authorized Signatory's Given Name (First Name)
Guilherme

2. Petitioner's or Authorized Signatory's Title
N/A

3. Petitioner's or Authorized Signatory's Daytime Telephone Number
2043333532

4. Petitioner's or Authorized Signatory's Mobile Telephone Number (if any)
2043333532

5. Petitioner's or Authorized Signatory's Email Address (if any)
guilhermepsa@gmail.com

Petitioner's or Authorized Signatory's Certification and Signature

If filing this petition on behalf of an organization, I certify that I am authorized to do so by the organization:

a. I reviewed and provided or authorized all of the responses and information in my petition;

b. I understood all of the responses and information contained in, and submitted with, my petition; and

c. All of the responses and information were complete, true, and correct at the time of filing

Furthermore, I authorize the release of any information from any and all of my records as authorized signatory and the petitioner's records that USCIS may need to determine the petitioner's eligibility for an immigration request and to other entities and persons where necessary for the administration and enforcement of U.S. immigration law.

6.a. Petitioner's or Authorized Signatory's Signature
Guilherme Pereira da Silva Alves

6.b. Date of Signature (mm/dd/yyyy) 10/01/2026

Part 9. Interpreter's Contact Information, Certification, and Signature

Interpreter's Full Name

1.a. Interpreter's Family Name (Last Name)
N/A

1.b. Interpreter's Given Name (First Name)
N/A

2. Interpreter's Business or Organization Name
N/A

Interpreter's Contact Information

3. Interpreter's Daytime Telephone Number
N/A

4. Interpreter's Mobile Telephone Number (if any)
N/A

5. Interpreter's Email Address (if any)
N/A

Interpreter's Certification and Signature

I certify, under penalty of perjury, that I am fluent in English and N/A, and I have interpreted every question on the petition and Instructions and interpreted the petitioner's or authorized signatory's answers to the questions in that language, and the petitioner or authorized signatory informed me that they understood every instruction, question, and answer on the petition.

6.a. Interpreter's Signature
N/A

6.b. Date of Signature (mm/dd/yyyy) N/A

Part 10. Contact Information, Certification, and Signature of the Person Preparing this Petition, if Other Than the Petitioner or Authorized Signatory

Preparer's Full Name

1. Preparer's Family Name (Last Name)

HAVERROTH SILVA

Preparer's Given Name (First Name)

Otavio

2. Preparer's Business or Organization Name

HS Law Corp

Preparer's Contact Information

3. Preparer's Daytime Telephone Number

5102419336

4. Preparer's Mobile Telephone Number (if any)

5102419336

5. Preparer's Email Address (if any)

otavio@legalhs.com

Preparer's Certification and Signature

I certify, under penalty of perjury, that I prepared this petition for the petitioner or authorized signatory at their request and with express consent and that all of the responses and information contained in and submitted with the petition are complete, true, and correct and reflects only information provided by the petitioner or authorized signatory. The petitioner or authorized signatory reviewed the responses and information and informed me that they understand the responses and information in or submitted with the petition.

6. Preparer's Signature



Date of Signature (mm/dd/yyyy) 10/01/2026

Part 11. Additional Information

If you need extra space to provide any additional information within this petition, use the space below. If you need more space than what is provided, you may make copies of this page to complete and file with this petition or attach a separate sheet of paper. Type or print your name and A-Number (if any) at the top of each sheet; indicate the **Page Number**, **Part Number**, and **Item Number** to which your answer refers; and sign and date each sheet.

1. Family Name (Last Name): PEREIRA DA SILVA ALVES

Given Name (First Name): Guilherme

Middle Name: N/A

2. IRS EIN ► N/A

3.

Page Number	Part Number	Item Number
4	6	3

Define company strategy, operational objectives, and growth initiatives; manage financial planning, budgeting, and resource allocation; drive business development and client relations; and oversee workforce recruitment, training, and operational compliance.

4.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

5.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

6.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

7.

Page Number	Part Number	Item Number
N/A	N/A	N/A

N/A

OMB Approval: 1205-0451
Expiration Date:02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Appendix A: Foreign Worker Information
U.S. Department of Labor

FOREIGN WORKER INFORMATION

A. Foreign Worker Contact Information

1. Foreign Worker's Last (family) Name *			
PEREIRA DA SILVA ALVES			
2. Foreign Worker's First (given) Name *			
Guilherme			
3. Foreign Worker's Middle Name(s) *			
N/A			
4. Address 1 *(current)* *			
361 Copperfield Blvd SE			
5. Address 2 *(apartment/suite/floor and number)* §			
N/A			
6. City *		7. State *	8. Postal Code *
Calgary		N/A	T2Z 4C8
9. Country *		10. Province §	
Canada		Alberta	
11. Date of Birth *(mm/dd/yyyy)* *	12. Class of Admission *	13. Alien Registration Number (A#) (if applicable) *	
01/08/1987	N/A	**0**	
14. Country of Birth *			
Brazil			
15. Country of Citizenship or Nationality *			
Canada			

B. Foreign Worker Education §

a. Educational Attainment Information 1

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity	
☐ None ☐ High School/GED ☐ Associate ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ■ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained	
Graduate Certificate	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field)	
Computer Networks and Systems Security	
1c. Name of Institution that issued the degree/diploma	
Universidade Federal de Goiás	
1d. Name of Country of institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
Brazil	03/2011

b. Educational Attainment Information 2

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity	
☐ None ☐ High School/GED ■ Associate ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)	
1a. If "Other Degree" in question 1, specify the diploma/degree attained	
N/A	
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field)	
Communication Networks	
1c. Name of Institution that issued the degree/diploma	
Instituto Federal de Educação, Ciência e Tecnologia de Goiás	
1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
Brazil	08/2008

***B. Foreign Worker Education** (continued)*

c. Educational Attainment Information 3

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ▣ None ☐ High School/GED ☐ Associate ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)
1a. If "Other Degree" in question 1, specify the diploma/degree attained **N/A**
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) **N/A**
1c. Name of Institution that issued the degree/diploma **N/A**

1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
N/A	

d. Educational Attainment Information 4

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ▣ None ☐ High School/GED ☐ Associate's ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)
1a. If "Other Degree" in question 1, specify the diploma/degree attained **N/A**
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) **N/A**
1c. Name of Institution that issued the degree/diploma **N/A**

1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
N/A	

e. Educational Attainment Information 5

1. Education: U.S. Diploma/Degree attained relevant to the job opportunity ▣ None ☐ High School/GED ☐ Associate's ☐ Bachelor's ☐ Master's ☐ Doctorate (PhD) ☐ Other Degree (JD, MD, etc.)
1a. If "Other Degree" in question 1, specify the diploma/degree attained **N/A**
1b. Specify major(s) and/or field(s) of study (may list more than one related major and more than one field) **N/A**
1c. Name of Institution that issued the degree/diploma **N/A**

1d. Name of Country of Institution identified in question 1c	1e. Month/year attained (*mm/yyyy*)
N/A	

C. Foreign Worker Training Qualifications §

a. Training, Certification(s), and/or License(s) Information 1

1. Name of Institution/School/Training provider Zend
1a. Name of training, coursework, experience received Zend Certified PHP Engineer

1b. Training/Certifications/licenses attained (if applicable)		
Zend Certified PHP Engineer		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)
N/A	N/A	2017

b. Training, Certification(s), and/or License(s) Information 2

1. Name of Institution/School/Training provider		
Association for Computing Machinery (ACM)		
1a. Name of training, coursework, experience received		
Professional Membership		
1b. Training/Certifications/Licenses attained (if applicable)		
ACM Professional Member		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)
N/A	N/A	12/2024

c. Training, Certification(s), and/or License(s) Information 3

1. Name of Institution/School/Training provider		
N/A		
1a. Name of training, coursework, experience received		
N/A		
1b. Training/certifications/licenses attained (if applicable)		
N/A		
1c. Start date of training (*mm/yyyy*)	1d. End date of training (*mm/yyyy*)	1e. Month/year awarded (*mm/yyyy*)

D. Foreign Worker Training Qualifications §

a. Skills, Abilities, and Proficiencies 1

1. Name of Employer/Institution/School/Training Provider	
N/A	
1a. Country	1b. State, Territory, or Province
Brazil and Canada	**N/A**

1c. Description of specific skills, abilities, and/or proficiencies the foreign worker possesses or attained, which help establish whether the foreign worker meets the requirements identified for the job opportunity *(up to 1,500 characters)*

Proficient in software engineering, cloud infrastructure, and AI-enabled application development. Programming languages include Python, PHP, Go, TypeScript, JavaScript, and Ruby. Experienced with AI and machine-learning application capabilities, including agentic workflows, autonomous agents, tool calling, LLM integrations, retrieval-augmented generation (RAG), and prompt engineering. Cloud and DevOps skills include AWS (ECS, EKS, EC2, S3, RDS, and Lambda), GCP, Azure, Docker, Kubernetes, Helm, Istio, KEDA, Terraform, CI/CD, GitHub Actions, Buildkite, and GitLab CI.

Backend and web development experience includes FastAPI, SQLAlchemy, Django, Laravel, React, Vue.js, RESTful APIs, GraphQL, microservices, and event-driven architecture. Data and storage technologies include PostgreSQL, MongoDB, DynamoDB, Redis, Microsoft SQL Server, and Oracle. Security and observability experience includes IAM, OWASP, SOC 2, Datadog APM and distributed tracing, and AWS CloudWatch.

b. Skills, Abilities, and Proficiencies 2

1. Name of Employer/Institution/School/Training Provider	
N/A	
1a. Country	1b. State, Territory, or Province
N/A	**N/A**
1c. Description of specific skills, abilities, and/or proficiencies the foreign worker possesses or attained, which help establish whether the foreign worker meets the requirements identified for the job opportunity *(up to 1,500 characters)*	
N/A	

E. Foreign Worker Work Experience §

a. Work Experience 1

1. Employer Name			
Gusto			
1a. Address 1			
525 20th St			
1b. Address 2			
N/A			
1c. City or Town			1d. Postal Code
San Francisco			94107
1e. Country		1f. State, Territory, or Province	
United States of America		California	
1g. Job Title			
Staff Software Engineer **(remotely)**			
1h. Start Date *(mm/yyyy)*	1i. End Date *(mm/yyyy)*	1j. Present	1k. Hours Worked Per Week
04/2026	N/A	■ Yes ☐ No	40

1l. Job Duties: Specify details of the job (work tasks performed, use of tools/equipment, supervision, etc.) (*up to 3,500 characters*)

Led the technical integration of Mosey's compliance platform into Gusto's ecosystem. Managed the infrastructure workstream for backend services, internal tools, and customer workflows while delivering the integration on schedule. Migrated services to a managed Kubernetes environment, modernized deployments, and built the integration layer for authentication, secrets, and document routing. Consolidated AI capabilities onto the managed platform and implemented distributed tracing to ensure full production visibility across cross-functional teams.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: **Deel Canada Services Inc.**
Employer Address: **700 West Georgia Street, Suite 2200, Vancouver, BC, Canada**
Job Title: Senior Software Engineer
Start Date - End Date: 03-2024 - 04-2026
Job Duties: At Mosey, developed customer-facing compliance features and cloud solutions for an AI-powered business compliance platform. Delivered the Notices product and AI features that summarize government notices, and built an AI agent to retrieve filings, obligations, and account data from government portals. Automated deployment pipelines, improved backend performance on FastAPI/SQLAlchemy, and reduced cloud costs through infrastructure improvements. Also worked with ReactJS and supported SOC-2 compliance through continuous monitoring.

B. Supplemental Information 2 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: Top Hat
Employer Address: 151 Bloor Street West, Suite 200, Toronto, ON, Canada
Postal Code: M5S 1S4
Job Title: Senior Software Engineer
Start Date - End Date: 03/2021 - 01/2024
Job Duties: At Top Hat, enhanced backend microservice architecture for dynamic question delivery and automated grading on a large-scale SaaS platform. Built the Question Bank MVP, developed an AI question generator using prompt engineering, and reduced AWS infrastructure costs through database tuning. Also improved grade-calculation algorithms and led frontend modernization to TypeScript and React Query to increase performance and responsiveness.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: Lighthouse Labs
Employer Address: 662 King St W, Toronto, ON, Canada
Postal Code: M5V 1M7
Job Title: Mentor
Start Date - End Date: 09/2021 - 05/2024
Job Duties: At Lighthouse Labs, mentored roughly 20 students per month through paired programming and technical coaching. Taught and supported projects in Node.js, Express, Ruby on Rails, PostgreSQL, and React to improve project completion rates. Provided technical feedback, troubleshooting assistance, and career guidance in a collaborative learning environment.

B. Supplemental Information 2 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: Bold Commerce
Employer Address: 50 Fultz Blvd, Winnipeg, MB, Canada
Postal Code: R3Y 0L6
Job Title: Developer
Start Date - End Date: 02/2019 - 02/2021
Job Duties: At Bold Commerce, built high-impact e-commerce features for Shopify merchants, focused on Subscriptions and Checkout. Integrated payment providers including Stripe, Spreedly, and Braintree. Developed full-stack features in PHP (Laravel), Python, MySQL, and React/Redux, practiced TDD with unit and E2E testing, improved CI/CD pipelines and Docker images, and led the platform upgrade from PHP 5 to PHP 7.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: Auvo Tecnologia S.A.
Employer Address: Rua Itumbiara, 505, Quadra 148, Lote 29, Andar 1, Cidade Jardim, Goiânia - GO, Brazil
Postal Code: 74413-120
Job Title: DevOps / Cloud Engineer
Start Date - End Date: 07/2020 - 09/2021
Job Duties: At Auvo Tecnologia, implemented end-to-end CI/CD pipelines on Azure DevOps and automated AWS deployments across containerized workloads. Designed and deployed Kubernetes infrastructure on AWS EKS with Istio service mesh, automated TLS with Cert-Manager and Let's Encrypt, managed networking and security policies with Calico CNI, and automated external RDS backups using MyDumper and Kubernetes CronJobs.

B. Supplemental Information 2 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: Soluti Certificação Digital
Employer Address: Av. Fued José Sebba, 700, Jardim Goiás, Goiânia - GO, Brazil
Postal Code: 74805-100
Job Title: Software Engineering Manager
Start Date - End Date: 03/2015 - 01/2019
Job Duties: At Soluti, led cross-functional engineering initiatives from design through staging deployment using Agile and GitFlow. Delivered architectural improvements that reduced customer environment provisioning from 30 days to 2, introduced Docker and Docker Compose standards across teams, built monitoring integrations with Zabbix, and administered GitLab and Redmine while resolving cross-team infrastructure conflicts.

For Public Burden Statement, see the Instructions for Form ETA-9089.

OMB Approval: 1205-0451
Expiration Date: 02/28/2029

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: Indra Brasil Soluções e Serviços Tecnológicos S.A.
Employer Address: Avenida Deputado Jamel Cecílio, 3300, Edifício Shopping Flamboyant, Piso 3, Deck Sul, Jardim Goiás, Goiânia - GO, Brazil
Postal Code: 74810-100
Job Title: Programmer
Start Date - End Date: 2013-2015
Job Duties: Worked as Lead PHP Architect supporting the design and development of PHP-based web applications. Provided technical guidance on application architecture, code quality, and system integration, and collaborated with engineering teams on software delivery.

B. Supplemental Information 2 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: Fundação de Apoio à Pesquisa – FUNAPE
Employer Address: Avenida Esperança, 1533, Quadra Área, Lote Área, Condomínio Parque Tecnológico Samambaia, Edifício FUNAPE, Campus Samambaia – UFG, Goiânia - GO, Brazil
Postal Code: 74690-612
Job Title: Web Developer
Start Date - End Date: 2008-2013
Job Duties: Worked as a Web Developer developing and maintaining web applications. Assisted with frontend and backend development, database integration, application testing, bug fixes, and ongoing maintenance of web-based systems.

For Public Burden Statement, see the Instructions for Form ETA-9089.

SUPPLEMENTAL INFORMATION

A. Supplemental Information 1 §

1. Section and Item Number	E	1a. Section Name or Category of Supplemental Information	Foreign Worker Work Experience

1b. Supplemental Information. *(up to 1,500 characters)*

Employer Name: AgroSol Tecnologia
Employer Address: Avenida T2, 1281, Carmo Galeria, Sala 14, Setor Bueno, Goiânia - GO, Brazil
Postal Code: 74210-010
Job Title: PHP Instructor
Start Date - End Date: 2009

Job Duties: Worked as a PHP Instructor, providing instruction in PHP programming and web development. Prepared and delivered technical lessons, guided students through programming exercises and projects, and provided feedback and troubleshooting support throughout the training program.

B. Supplemental Information 2 §

1. Section and Item Number	N/A	1a. Section Name or Category of Supplemental Information	N/A

1b. Supplemental Information. *(up to 1,500 characters)*

N/A

For Public Burden Statement, see the Instructions for Form ETA-9089.

Employment OMB Approval: 1205-0451
Expiration Date: 02/28/2029

Application for Permanent Employment Certification
Form ETA-9089 – Final Determination: Permanent Employment Certification Approval
U.S. Department of Labor

PERMANENT EMPLOYMENT CERTIFICATION APPROVAL

A. U.S. Government Agency Use Only

Pursuant to the provisions of Sections 212(a)(5)(A) of the Immigration and Nationality Act, as amended, the Department hereby certifies that there are not sufficient workers who are able, willing, and qualified, and who will be available at the time of application for a visa and admission into the United States and place needed to fill the job opportunities for which certification is sought, and the permanent employment of the foreign worker will not adversely affect the wages and working conditions of workers in the United States similarly employed.

Therefore, by virtue of the signature below, the Department hereby acknowledges granting certification for the following *Application for Permanent Employment Certification* (Form ETA-9089):

1. DOL Case Number		2. Case Status
3. Employer Legal Business Name		4. Employer FEIN
5. Foreign Worker's Last (family) Name		
6. Foreign Worker's First (given) Name		
7. Foreign Worker's Middle Name(s)		
8. Job Title		
9. SOC Code	10. SOC Occupational Title	
Labor Certification Validity Information		
11. Filing Date	12. Determination Date	13. Expiration Date
14. Department of Labor Office of Foreign Labor Certification *(electronic signature)*		

Pursuant to 20 CFR 656, the aforementioned permanent labor certification is valid only for the job opportunity, the foreign worker, and the area of intended employment specified on the approved Form ETA-9089, including all appendices and any modifications approved by the Department. The aforementioned filing date on this approved *Application for Permanent Employment Certification*, established under 20 CFR 656.17(c), may be used as a priority date by the Department of Homeland Security and the Department of State, as appropriate. This approved *Application for Permanent Employment Certification* will expire if not filed in support of *Immigrant Petition for Alien Workers* (Form I-140) with the Department of Homeland Security by the aforementioned expiration date.

The foreign worker covered by this approved *Application for Permanent Employment Certification* has declared under Section B below, under penalty of perjury, that the foreign worker has read and reviewed every page of Appendix A for this approved Form ETA-9089, takes full responsibility for the accuracy of all information contained therein, and intends to accept permanent employment in the job opportunity specified on the approved Form ETA-9089, including all appendices, offered by the employer if granted a visa or an adjustment of status based on this permanent labor certification.

The employer covered by this approved *Application for Permanent Employment Certification* has declared under Section D below under penalty of perjury that it has read and reviewed every page of this approved Form ETA-9089, including all appendices, and takes full responsibility for the accuracy of all information contained therein and all documentation supporting this approved *Application for Permanent Employment Certification*, including any representations made by the employer's authorized preparer, agent or attorney, as applicable.

OMB Approval: 1205-0451
Expiration Date: **02/28/2029**

Application for Permanent Employment Certification
Form ETA-9089 – Final Determination: Permanent Labor Certification Approval
U.S. Department of Labor

B. Foreign Worker Declaration

I declare under penalty of perjury that I have read and reviewed all information contained in Appendix A of this approved Form ETA-9089, and that to the best of my knowledge the information contained therein is true and accurate. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement thereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

I further declare that I am the person identified under Section A, Fields 5, 6, and 7 above. I did not participate in any activities involving the interviewing or consideration of U.S. workers and intend to accept permanent employment in the job opportunity specified on this approved Form ETA-9089, including all appendices, offered by the employer if granted a visa or an adjustment of status based on this permanent labor certification.

1. Signature *	2. Date Signed *
Guilherme Pereira da Silva Alves	10/01/2026

C. Attorney or Agent Declaration

I declare under penalty of perjury that I am an attorney for the employer, or that I am an employee of, or hired by, the employer listed in Section C of the Form ETA-9089, and that I have been designated by that employer in accordance with 20 CFR 656.10(b) to act on its behalf in connection with this application.

I hereby certify that I have provided to the employer the entire Form ETA-9089, appendices, and all supporting documentation for review and to the best of my knowledge the information contained herein is true and accurate, including the employer's declaration regarding activities that I have undertaken on the employer's behalf in connection with this application. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement hereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

1. Attorney or Agent's Last (family) Name *	2. First (given) Name *	3. Middle Initial §
HAVERROTH SILVA	Otavio	N/A
4. Firm/Business Name §		
HS Law Corp		
5. Signature *		6. Date Signed *
		10/01/2026

D. Employer Declaration

I hereby designate the agent or attorney identified in Section C (if any) of the Form ETA-9089 to represent me for the purpose of labor certification and, by virtue of my signature in Field 5 below, **I take full responsibility** for the accuracy of any representations made by my agent or attorney, and my designated preparer identified in Section C above, on every page of the Form ETA-9089, including all appendices, and documentation supporting this application.

I declare *under penalty of perjury that I have read and reviewed this application, including every page of the Form ETA-9089, appendices, and* supporting documentation, and that to the best of my knowledge the information contained therein is true and accurate. *I understand that to knowingly and/or willfully furnish materially false information in the preparation of this form and any supplement thereto or to aid, abet, or counsel another to do so is a federal offense punishable by fines, imprisonment, or both (18 U.S.C. 2, 1001, 1546, 1621).*

1. Last (family) Name *	2. First (given) Name *	3. Middle Initial §
4. Title *		
5. Signature *		6. Date Signed *

For Public Burden Statement, see the Instructions for Form ETA-9089.

PERM Case Number: _____ Case Status: _____ Determination Date: _____ Expiration Date: _____

YOUSA
LAW FIRM

SUMMARY OF COVER LETTER

Petitioner: ALVES, Guilherme Pereira da Silva
Type of Petition: I-140, EB-2 National Interest Waiver
Classification Sought: Immigration and Nationality Act 203(b)(2)(B)

This petition is submitted on behalf of Mr. Guilherme Pereira da Silva Alves, a technology professional with over fifteen years of experience in software engineering, artificial intelligence, cloud computing, and DevOps. The evidence demonstrates that he satisfies at least three regulatory criteria for exceptional ability, including academic credentials, over ten years of experience, professional membership, high remuneration, technical certifications, and industry recognition. Through Vertex Digital Systems LLC, he proposes to advance AI integration, software development, cloud modernization, DevOps automation, and intelligent data platforms in the United States. Mr. Alves seeks exemption from the labor certification requirement under *Matter of Dhanasar*, 26 I&N Dec. 884 (AAO 2016), satisfying the three-prong framework for a National Interest Waiver:

1. **Substantial Merit and National Importance:** The proposed endeavor advances AI adoption, digital infrastructure modernization, cloud optimization, software automation, and scalable technology platforms in the United States. These services will promote productivity, operational resilience, innovation, competitiveness, and employment across multiple sectors while supporting federal priorities in AI, cybersecurity, advanced computing, and digital modernization.

2. **Well-Positioned to Advance the Proposed Endeavor:** Mr. Alves's more than fifteen years of experience in software engineering, cloud architecture, DevOps, and artificial intelligence uniquely position him to advance the proposed endeavor. His background includes developing AI compliance tools, automating deployment pipelines, reducing cloud infrastructure costs, and engineering high-scale platforms. His academic credentials, ACM membership, high remuneration, entrepreneurial leadership, financial capacity, and letters of support from senior technology executives confirm that he is well positioned to advance the venture.

Balancing of Benefits to the United States: As founder of Vertex Digital Systems LLC, Mr. Alves will provide specialized technology services to multiple U.S. businesses, create employment, and stimulate economic activity. Because his entrepreneurial, multi-client endeavor does not involve filling a conventional position, labor certification is impractical. The United States would benefit from his expertise in software architecture, AI, cloud modernization, DevOps, and technical leadership, even if qualified U.S. workers are available.

Considering the evidence, Mr. Guilherme Pereira da Silva Alves satisfies the requirements for a National Interest Waiver. We respectfully request favorable adjudication of this petition in recognition of his contributions to artificial intelligence, technology modernization, and the national interest of the United States.



Otavio Haverroth Silva

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September 23, 2026.

VIA USPS

USCIS

Attn: I-140

P.O. Box 660128

Dallas, TX 75266-0128

Ref: I-140 Immigrant Visa Self-Petition of Mr. Guilherme Pereira da Silva Alves – Request for National Interest Waiver under the EB-2 Classification

STEM PROFESSIONAL AND PROPOSED ENDEAVOR

CIP Code 11.0701 – Computer Science

Dear Immigration Officer,

This letter is respectfully submitted in support of Mr. Guilherme Pereira da Silva Alves (hereinafter "Mr. Alves") and his immigration self-petition for alien worker (Form I-140), demonstrating his fulfillment of the EB-2 National Interest Waiver requirements and providing evidentiary support.

Mr. Alves is eligible for EB-2 classification as he meets the eligibility criteria as a person of exceptional ability pursuant to Section 203(b)(2) of the Immigration and Nationality Act, 8 U.S.C. § 1153(b)(2). Specifically, the beneficiary satisfies the regulatory requirements through: official academic records evidencing higher education and specialized technical training in Communications Networks from the Federal Institute of Goiás (IFG) and a post-graduate specialization in Computer Networks and System Security from the Federal University of Goiás (UFG); official letters and documentation demonstrating more than thirteen years of full-time professional experience in software engineering, distributed systems, cloud architecture, DevOps, and artificial intelligence integration; professional certification as a Zend Certified Engineer; professional membership in the Association for Computing Machinery (ACM); documentation of high remuneration, well above market averages; and extensive recognition for his achievements and significant contributions from senior technology executives and engineering leaders across North America, including the successful implementation of autonomous AI agent workflows, migration of enterprise cloud platforms, zero percent deployment failure pipeline automations, and architectural leadership over systems supporting hundreds of millions of transactions.

Mr. Alves, a Brazilian national, is a senior software architect, artificial intelligence solutions engineer, and technology entrepreneur with over fifteen years of progressive experience across software development, cloud infrastructure modernization, DevOps delivery optimization, and intelligent data systems. He intends to establish Vertex Digital Systems LLC, a technology enterprise to be headquartered in Dallas, Texas, where he will serve as Founder, General Manager, and AI Solutions Director, overseeing strategic vision, technology roadmaps, service line execution, client digital modernizations, and technical delivery teams. His professional background combines advanced technical expertise in full-stack software development, container orchestration, autonomous AI systems, and microservices architecture with technical leadership and entrepreneurial capability.

His exceptional credentials, demonstrated by sustained technical leadership in complex corporate environments, successful delivery of large-scale enterprise modernization initiatives, reduction of infrastructure operating costs by 23 percent, design of AI-driven compliance automation platforms, and continuous contributions to mission-critical digital systems, place him significantly above ordinary professionals in his field. As such, he represents a valuable resource to the United States technology ecosystem, particularly in accelerating artificial intelligence adoption, strengthening cloud infrastructure resilience, optimizing software delivery lifecycles, and advancing digital transformation across key sectors of the American economy.

In *Matter of Dhanasar*, 26 I&N Dec. 884 (AAO 2016), it was established that USCIS may grant a National Interest Waiver if the petitioner demonstrates, by a preponderance of the evidence, that:

- **His proposed endeavor has substantial merit and national importance.** In this particular case, in advancing artificial intelligence integration, custom enterprise software platforms, cloud modernization, software delivery automation, and intelligent data systems through Vertex Digital Systems LLC, directly supporting federal priorities in artificial intelligence leadership, cybersecurity, and digital infrastructure resilience while creating direct and indirect employment opportunities for U.S. workers (Section 3.1);

- **He is exceptionally well-positioned to advance this endeavor.** Based on Mr. Alves's more than fifteen years of engineering and architectural experience, his proven track record of designing AI agent platforms and high-throughput cloud environments, his formal credentials in communications and distributed systems, his professional standing with the ACM, substantial financial self-sustainability, and authoritative endorsements from prominent technology executives and software directors (Section 3.2); and

- **On balance, it is clearly in the interest of the United States to waive the job offer and labor certification requirements.** Mr. Alves's proposed endeavor will provide multi-client technology modernizations, promote technological innovation, expand specialized STEM workforce participation, and foster economic growth. Because he will lead an entrepreneurial venture rather than fill a conventional employment vacancy, the traditional PERM process is impractical, and the nation will derive substantial and immediate benefits from his multidisciplinary contributions even if other qualified workers are theoretically available (Section 3.3).

The evidence enclosed with this petition will establish, by a preponderance of the evidence, that Mr. Alves's contributions will serve the national interest of the United States and satisfy all elements of the EB-2 NIW standard.

1. LEGAL STANDARD
Preponderance of the Evidence

The standard of proof, commonly used in federal matters, known as the "preponderance of the evidence standard," comes into play when the plaintiff satisfies the burden of proof by offering evidence that demonstrates their claims have a greater than 50% chance of being true. In other words, if a piece of evidence can be more likely to be true than false, the burden of proof is met.

If evidence falls short of the 51% standard, examiners should resolve their doubts by requesting clarifying evidence to allow the petitioner to explain and document its eligibility. The preponderance standard is "rock bottom at the fact-finding level of Electrical litigation." (Matter of E-M, 20 I. & N. Dec. 77 (BIA 1989), at 83 citing Charlton v. FTC, 543 F.2d 903, 907 (D.C.Cir.1976)).

BIA member Lory Rosenberg, In re M-B-A-, 23 I&N Dec. 474 at 484 (BIA 2002), notes that preponderance "requires evidence of a greater than 50% chance that an event will occur," citing INS v. Cardoza-Fonseca, 480 U.S. 421, 431 (1987). She adds that preponderance "simply requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence before [he] may find in favor of the party who has the burden to persuade the [judge] of the fact's existence," citing In re Winship, 397 U.S. 358, 371–72 (1970) (Harlan, J., concurring). She concludes that "(un)like other standards of proof such as reasonable doubt or clear and convincing evidence, the preponderance standard 'allows both parties to share the risk of error in roughly equal fashion'" citing Metropolitan Stevedore Co. v. Rambo, 521 U.S. 121, 137 (1997).

The evidence presented in this petition strongly indicates that Mr. Alves more likely than not meets the EB-2 category criteria as an individual of exceptional ability in software engineering, artificial intelligence implementation, and cloud infrastructure modernization. Furthermore, applying the preponderance of evidence standard, it is highly likely that Mr. Alves qualifies for a National Interest Waiver, given that his proposed endeavor, focused on artificial intelligence integration and business process automation, custom software and SaaS platform development, cloud infrastructure modernization, and intelligent data solutions for small and medium-sized businesses across the United States, possesses substantial merit and national importance to the United States.

2. THE EB-2 CLASSIFICATION
Exceptional Ability

To qualify under the EB-2 category, an individual must demonstrate eligibility as either a member of the profession with an advanced degree or as a person of exceptional ability in the sciences, arts, or business. In cases involving exceptional ability, the petitioner must satisfy at least three (3) of the criteria specified under the Immigration and Nationality Act (INA) and 8 C.F.R. § 204.5(k)(3)(ii).

Using the preponderance of the evidence standard, this petition will demonstrate that Mr. Alves meets at least three (3) of these qualifying criteria, thereby establishing his exceptional ability in the field of technology.

2.1. Official academic record showing that you have a degree, diploma, certificate, or similar award from a college, university, school, or other institution of learning relating to your area of exceptional ability:

In October 2008, Mr. Alves was awarded the title of Technologist in Communication Networks (Título de Tecnólogo em Redes de Comunicação) by the Instituto Federal de Educação, Ciência e Tecnologia de Goiás (IFG), an accredited institution of higher education in Goiânia, Brazil, recognized by the Brazilian Ministry of Education and operating under Brazilian federal educational regulations. The diploma confirms the successful completion of a three-year

undergraduate program addressing foundational and applied competencies in communications, information technology, and systems-oriented coursework.

In addition, in March 2011, Mr. Alves completed a specialization program in Computer Networks and Systems Security (Curso de Especialização em Redes de Computadores e Segurança de Sistemas) at the Universidade Federal de Goiás (UFG), a federal public university recognized as one of the leading institutions of higher education in Brazil. Admission to this program requires a completed bachelor-level degree, and the program provided advanced graduate-level instruction in TCP/IP architecture, cryptography and protocols for secure communication, systems auditing and forensic security, network management, and systems security, reflecting a progressive and specialized academic trajectory beyond his initial undergraduate studies.

Furthermore, Mr. Alves's academic credentials were assessed by Carnegie Evaluations LLC, a firm specializing in the evaluation of foreign educational credentials, in an Evaluation of Academics dated April 28, 2026, reviewed and approved by Dr. Zach G. Zacharia, Director of Carnegie Evaluations LLC and Associate Professor at Lehigh University. After reviewing copies of the original diploma certificates and transcripts, Carnegie Evaluations LLC concluded that Mr. Alves's Technologist degree in Communication Networks from IFG is equivalent to an Associate of Science degree in Communications, and that his specialization program in Computer Networks and Systems Security from UFG is equivalent to a Graduate Certificate in Information Systems, both from an accredited institution of higher education in the United States. The evaluation further observes that the academic standards maintained by both Brazilian institutions are significantly similar to those upheld by accredited colleges and universities in the United States. (Exhibit B.I, Academic Credential Evaluation.)

According to the academic records issued by both institutions, Mr. Alves's coursework encompassed subject matter directly applicable to computer systems, information technology infrastructure, software engineering principles, and systems architecture. These academic credentials demonstrate a sustained and deliberate pursuit of formal education in fields directly relevant to his subsequent professional specialization.

The diplomas were issued in Mr. Alves's name by IFG and UFG, respectively, and formally recognize his completion of these academic programs. The academic record confirms the acquisition of theoretical and technical competencies directly applicable to software engineering, systems architecture, and technology infrastructure, providing the academic foundation upon which his subsequent professional career was built.

This academic training is directly aligned with Mr. Alves's professional trajectory as a senior software engineer and technology leader, and it supports his specialization in software architecture, cloud infrastructure, systems engineering, and enterprise application development, culminating in his plan to found Vertex Digital Systems LLC.

In conclusion, Mr. Alves's academic training in communications and information systems demonstrates a continued commitment to formal education in his field of exceptional ability and constitutes a solid educational foundation directly related to his proposed endeavor in artificial intelligence integration, software engineering, and cloud infrastructure modernization for organizations across the United States. Accordingly, he clearly satisfies this regulatory criterion. **(Exhibit B.I.)**

2.2. Evidence in the form of letter(s) from current or former employer(s) showing that the beneficiary has at least 10 years of full-time experience in the occupation in which he or she is being sought:

Mr. Alves is a highly experienced software engineer, cloud infrastructure specialist, and technology leader, with **more than thirteen years of full-time professional experience** in software engineering, backend development, cloud infrastructure, and platform engineering, combining advanced technical expertise with progressive levels of professional responsibility.

As documented by employment verification letters and official declarations issued by current and former employers, Mr. Alves has continuously exercised full-time professional activities in the field of software engineering since at least May 7, 2013, when he commenced employment with Indra Brasil Sol. Serv. Tec. S.A. as Programmer, remaining employed until March 21, 2015. The declaration issued by Indra confirms his full-time role designing system architecture, leading development teams on best development practices, and developing systems using PHP, SQL Server, CSS Bootstrap, and jQuery.

Following this position, Mr. Alves continued his professional progression through a full-time role of increasing responsibility at Soluti, where the employment letter issued by the company confirms that he worked as Software Engineering Manager from March 2015 to January 2019. In this position, he led a cross-functional team of fourteen developers, launched more than four strategic applications, developed a private cloud infrastructure that served as the foundation for the company's SaaS platform, and restructured and modernized the platform used by partners to manage the lifecycle of digital certificate emission, contributing directly to the company's growth from twenty to more than one hundred partners.

Mr. Alves subsequently continued his full-time professional activities as an Intermediate Developer at Bold Commerce Inc., as confirmed by the employment letter issued by the company, from February 19, 2019 to February 18, 2021. In this role, he designed, developed, and maintained software features and applications, collaborated with cross-functional product, design, and QA teams, and contributed to code reviews and the continuous improvement of development processes and best practices.

His professional trajectory further progressed through a full-time position as Senior Software Engineer at Tophatmonocle Corp. ("Top Hat"), as confirmed by the employment letter issued by the company, from March 1, 2021 to January 30, 2024. In this role, Mr. Alves worked within a dynamic, cross-functional scrum team, implemented new features and core services on the Top Hat platform, and contributed to refactoring, optimizing, and improving a platform used by over one million students.

Mr. Alves subsequently held a full-time position as Software Developer at Deel Canada Services Inc., as confirmed by the employment verification letter issued by the company, from March 4, 2024 until April 2026. Through this employment, Mr. Alves served as a Senior Software Engineer at Mosey, an AI-powered compliance automation platform subsequently acquired by Gusto. Since April 8, 2026, Mr. Alves has been employed full-time by Gusto Canada ULC, as confirmed by the employment verification letter issued by the company on June 30, 2026, and currently serves as Staff Software Engineer at Gusto, where he leads the technical integration of the acquired compliance platform, oversees infrastructure modernization, and manages cross-functional technical initiatives spanning infrastructure, data, security, and observability functions.

This continuous and progressive range of technical and leadership responsibilities, spanning system architecture, software development, cloud infrastructure, and platform engineering, demonstrates not only Mr. Alves's specialized expertise in his occupation but also the sustained institutional trust placed in his competence to lead complex software development and infrastructure initiatives across multiple organizations.

Therefore, the documentary evidence conclusively establishes that Mr. Alves possesses at least 10 years of full-time experience in the occupation in which he is being sought, fully satisfying this regulatory criterion for classification as an individual of exceptional ability pursuant to 8 C.F.R. § 204.5(k)(3)(ii)(B). (Exhibit B.II)

2.3. A license to practice the profession or certification for a particular profession or occupation

Mr. Alves also satisfies the regulatory criterion set forth at 8 C.F.R. § 204.5(k)(3)(ii)(C) through a professional certification directly related to his occupation in software engineering and backend development. The documentary record includes the Zend Certified Engineer (PHP) credential, issued in 2017 by Zend Technologies through Rogue Wave Software, Inc., following the successful completion of rigorous testing requirements demonstrating advanced knowledge and technical proficiency in the PHP programming language.

This certification is recognized within the software development industry as a mark of specialized technical competency, distinguishing certified professionals from the broader population of software engineers. As reflected in the certifying documentation, the Zend Certified Engineer credential places recipients among a select group of professionals recognized for advanced expertise in PHP development, a core technology underlying enterprise software systems, web applications, and platform architectures throughout Mr. Alves's professional career. This credential is directly tied to the core duties of his occupation: advanced PHP expertise, validated by the certification, was fundamental to his work at Bold Commerce Inc., where he played a central role in the platform's upgrade from PHP 5 to PHP 7, and at Soluti, where he architected and modernized the company's SaaS platform. The credential is likewise recognized by Mr. Adrian Gazzoli in his support letter. (Exhibit B.III.)

This professional certification demonstrates recognized technical specialization and confirms Mr. Alves's qualifications in a highly specialized area of software engineering directly related to his occupation and proposed endeavor in software development, systems architecture, and technology solutions delivery.

2.4. Evidence that the beneficiary has commanded a salary or other remuneration for services that demonstrate exceptional ability:

Mr. Alves's compensation demonstrates remuneration substantially higher than that ordinarily commanded by comparable professionals in software engineering, cloud infrastructure, DevOps, and enterprise technology modernization, reflecting his exceptional technical competence and high market value.

According to official payroll records from his employment as Staff Software Engineer at Gusto Canada ULC, Mr. Alves receives a regular semi-monthly compensation of CAD $10,183.34, corresponding to an annual base salary of CAD $244,400.16 (approximately USD 173.321,15 per year)[1] This high level of earnings is further corroborated by official tax assessment documentation issued by the Canada Revenue Agency (Notice of Reassessment for tax year 2025, reporting total income of CAD $240,350).

Furthermore, according to Indeed Canada, the average annual salary for a Software Engineer in Canada is approximately CAD $102,000 per year (approximately USD $72,335.29 per year)[2]. Comparing Mr. Alves's annual earnings to the Canadian national average demonstrates that his

[1] https://www.bcb.gov.br/conversao
[2] https://www.bcb.gov.br/conversao

compensation is more than double (239%) the average salary earned by software engineering professionals in Canada.[3]

Mr. Alves is currently based in Calgary, Alberta, Canada, where he works remotely for Gusto Canada ULC and files his income taxes with the Canada Revenue Agency; the Canadian market is therefore his primary benchmark. For additional context, Indeed reports that the annual salary for a Software Engineer in Brazil, the country where he began his professional career, is approximately R$ 154,000 per year[4] (approximately USD 29.952,93 per year)[5]. This comparison shows that Mr. Alves earns compensation at a level materially above the ordinary remuneration associated with comparable software engineering professionals in Brazil.

Moreover, Mr. Alves's compensation is supported by official payroll documentation from Gusto Canada ULC, demonstrating that his high remuneration is not an isolated payment but compensation associated with his professional role as a Staff Software Engineer. His compensation is consistent with the level of specialized expertise reflected in his professional record, including his work with software architecture, cloud modernization, deployment automation, artificial intelligence solutions, and large-scale enterprise technology platforms.

Therefore, Mr. Alves's annual compensation is substantially above the remuneration normally commanded by professionals in similar positions. This evidence demonstrates that he commands remuneration significantly higher than that ordinarily received by others in his field and supports a finding that he satisfies the high-remuneration criterion under 8 C.F.R. § 204.5(k)(3)(ii)(D). (Exhibit B.IV).

2.5. Membership in a professional association(s)

Mr. Alves is a Professional Member of the Association for Computing Machinery (ACM), the world's largest and most prestigious educational and scientific computing society, dedicated to advancing computing as a science and a profession.

As evidenced by his membership certificate, Mr. Alves has fulfilled the requirements for Professional Membership and has been formally admitted as a member of ACM since December 2024. The certificate, issued in his name and signed by the organization's President, confirms his active status within this internationally recognized professional association.

ACM is a globally recognized professional association for individuals working in computing and information technology, bringing together computing educators, researchers, and professionals to share resources, address challenges, and advance the computing field as a whole. Membership in ACM reflects an individual's professional commitment to and standing within the computing field, requiring an applicant to demonstrate a genuine professional connection to computing through employment, education, or relevant technical experience.

Mr. Alves's membership in ACM demonstrates his integration into an organized professional community directly related to his field of exceptional ability and reflects professional recognition associated with his extensive experience in software engineering, cloud infrastructure, platform automation, and systems architecture.

This membership, therefore, reinforces Mr. Alves's credibility as an established technology professional and satisfies the regulatory criterion of membership in a professional association

[3] https://ca.indeed.com/career/software-engineer/salaries
[4] https://br.indeed.com/career/engenheiro-de-software/salaries
[5] https://www.bcb.gov.br/conversao

under 8 C.F.R. § 204.5(k)(3)(ii)(E) by evidencing his active participation in a recognized professional organization directly related to his field of exceptional ability. **(Exhibit B.V)**

2.6. Recognition for achievements and significant contributions to the industry or field by the petitioner's peers, government entities, professional or business organizations:

Mr. Alves's achievements and contributions to the information technology field are remarkable, particularly in the areas of artificial intelligence integration, cloud infrastructure engineering, backend architecture, and software delivery automation. His work has contributed to accelerating deployment cycles, reducing infrastructure costs, improving system reliability, enabling secure financial transaction processing, and modernizing enterprise-grade platforms across the education technology, business compliance, and e-commerce sectors in Canada and the United States.

Mr. Alves's professional recognition is evidenced by formal letters of support issued by senior technology professionals and industry specialists with extensive experience in software engineering, cloud infrastructure, compliance technology, and product management. These experts attest to his technical competence, leadership, ability to solve complex engineering challenges, and his capacity to transform technical solutions into measurable business outcomes. **(Exhibit B.VI)**

One such letter was issued by **Mr. Jeremy Heiler**, Engineering Manager in Business Compliance Engineering at Gusto, who has spent over fifteen years in software development and first supervised Mr. Alves as a peer, and later as his manager, at Mosey prior to its acquisition by Gusto. Mr. Heiler describes Mr. Alves's central role in developing an AI-powered platform designed to automate complex multistate business compliance obligations for companies operating in the United States, including his design of an autonomous AI agent capable of navigating government agency portals to retrieve filings and account data. He further reports that Mr. Alves automated the company's entire deployment pipeline, achieving a zero percent deployment failure rate, reduced cloud infrastructure costs by approximately 23 percent, and achieved a tenfold increase in backend processing performance. Following the acquisition by Gusto, Mr. Heiler notes that Mr. Alves led the infrastructure workstream migrating the platform to a managed Kubernetes environment with demand-based autoscaling, while building critical authentication and secrets management integration layers.

Mr. Reinaldo Borges de Freitas, Chief Technology Officer at Soluti Digital, who previously served as Information Technology Director at Soluti and was directly responsible for hiring Mr. Alves to manage the development team, recognizes his leadership through complex technical transitions involving biometric identification systems and georeferencing capabilities, as well as a pilot project on cloud-based digital certification that contributed to establishing a new regulatory standard in the Brazilian market. Mr. Borges de Freitas reports that the systems developed and improved under Mr. Alves's management have continued to operate at significant scale: the biometric system currently supports more than 10 million registrations and verifications annually, with Soluti's platform responsible for approximately one quarter of that volume, while the broader certification infrastructure processes approximately 590 million transactions each year, representing more than half of all such transactions in Brazil. He further notes that, under Mr. Alves's leadership of a team of fourteen developers, the company expanded its network of representatives from 20 to over 100, annual certificate issuance increased from 100,000 to 500,000, and unit costs were reduced by approximately thirty percent.

Mr. Sean Michael Fahey, Senior Engineering Manager at Top Hat, who supervised Mr. Alves as a founding member of a specialized engineering team focused on assessment and grading functionality, describes his role as technical lead for a critical feature enabling instructors to create student-specific exams, which remains in active use as the architectural foundation for current

upgrades. Mr. Fahey attributes the closing of multiple customer deals to the technical capabilities Mr. Alves architected and credits his work on observability and monitoring infrastructure as a key factor in maintaining a customer renewal rate of over 90 percent.

Mr. Gord Currie, formerly Senior Software Engineering Manager at Axon Public Safety, who was involved in Mr. Alves's hiring at Bold Commerce in 2018 and later oversaw his team following an organizational realignment, describes his contributions to a microservices-based e-commerce platform, including his significant role in upgrading a subscription-based application from PHP 5 to PHP 7 and integrating payment processing platforms such as Stripe, Spreedly, and Braintree. Mr. Currie highlights Mr. Alves's disciplined application of test-driven development and load testing practices, as well as his mentorship of junior developers.

Mr. Dex Getson, Software Development Manager at Bold Commerce, led the Subscriptions team that Mr. Alves joined as an Intermediate Developer in 2019, and describes his contributions to a Subscriptions application responsible for processing over forty million dollars in transactions each month. Mr. Getson highlights Mr. Alves's work improving the application's architecture by reducing unnecessary database connections and optimizing webhook processing, his central role in refactoring and stabilizing a large, customized legacy codebase during the upgrade from PHP 5.6 to PHP 7, and his implementation of 3D Secure authentication for Stripe transactions in support of Payment Card Industry Data Security Standard (PCI DSS) compliance requirements. He credits Mr. Alves with an exceptional combination of technical depth and a strong sense of ownership over long-term system health.

Additional independent recognition was provided by **Ms. Renee Fisher**, Vice President of Engineering at Coconut Software, who oversaw Mr. Alves's engineering department during his tenure at Top Hat, and **Mr. Adrian Gazzoli**, Group Product Manager at Top Hat, who worked directly with Mr. Alves on the development of a new question builder that reduced development time for new question types by approximately four months, as well as on a feature enabling instructors to excuse students from assignments involving complex grading logic. These professionals independently confirm Mr. Alves's expertise in artificial intelligence integration, cloud infrastructure modernization, distributed systems architecture, and software delivery optimization. Their testimonials consistently recognize his ability to translate complex technical challenges into scalable, reliable, and commercially significant solutions across diverse industry sectors.

Mr. Alves's recognition by experienced technology leaders and industry professionals demonstrates his standing among peers within the information technology field and evidences the practical impact of his contributions in artificial intelligence, cloud infrastructure, and software engineering.

This recognition therefore reinforces Mr. Alves's credibility as an established technology professional and satisfies the regulatory criterion concerning recognition for achievements and significant contributions to the industry or field under 8 C.F.R. § 204.5(k)(3)(ii)(F). **(Exhibit B.VI)**

Final Merits Determination

In the second part of the analysis, officers should evaluate the evidence together when considering the petition in its entirety for the final merits determination. The officer must determine whether or not the petitioner, by a preponderance of the evidence, has demonstrated that the beneficiary has a degree of expertise significantly above that ordinarily encountered in the sciences, arts, or business.

Mr. Alves, a technology professional, cloud infrastructure and artificial intelligence specialist, and prospective founder of Vertex Digital Systems LLC, clearly and consistently demonstrates his exceptional capabilities through a solid professional trajectory, sustained technical achievements, infrastructure modernization initiatives, operational optimization projects, and significant contributions to software engineering, cloud infrastructure, artificial intelligence integration, and platform automation.

His career includes more than a decade of uninterrupted and highly qualified professional activity in information technology, software engineering, cloud infrastructure, and DevOps, during which he held progressively responsible technical positions, including Programmer, Software Engineering Manager, Intermediate Developer, Senior Software Engineer, and Staff Software Engineer. Throughout his career, he has been responsible for artificial intelligence platform development, cloud migration initiatives, Kubernetes and containerized infrastructure, CI/CD pipeline automation, observability systems, and payment integration architecture, supporting organizations in the education technology, business compliance, digital identity, and e-commerce sectors across Brazil, Canada, and the United States.

Under his technical leadership, projects involving AI-powered automation, cloud migration, infrastructure modernization, and DevOps implementation generated measurable operational improvements, including reduction of infrastructure costs, acceleration of deployment cycles, elimination of deployment failures, substantial gains in backend processing performance, and increased platform scalability and reliability. The documentary record further demonstrates that Mr. Alves contributed to projects involving critical digital identity and financial certification infrastructure processing hundreds of millions of transactions annually, the design of autonomous AI agents for regulatory compliance automation, and the modernization of enterprise cloud environments through managed container orchestration and demand-based autoscaling.

Mr. Alves's performance has received formal recognition from senior technology professionals, engineering managers, and product leaders working in education technology, business compliance, digital identity, and e-commerce organizations, all of whom attest to his technical expertise, leadership capabilities, operational impact, and ability to implement practical and scalable solutions in complex engineering environments.

Furthermore, Mr. Alves maintains formal professional affiliation with the Association for Computing Machinery (ACM), a globally recognized professional association for individuals working in computing and information technology. His professional trajectory also reflects continuous technical training and specialization through certifications and practical experience involving software engineering, cloud infrastructure, artificial intelligence integration, and DevOps methodologies. In addition, the record demonstrates that Mr. Alves has consistently commanded remuneration substantially above market averages for comparable professionals, reflecting the high level of market recognition associated with his expertise and technical leadership.

These elements, considered collectively, demonstrate that Mr. Alves possesses experience, technical expertise, professional recognition, leadership capacity, and market valuation significantly above that ordinarily encountered in the field of information technology, cloud infrastructure, and artificial intelligence-driven systems engineering. Therefore, Mr. Alves has provided sufficient evidence that, considering the totality of the documentation presented and by the preponderance of the evidence, he qualifies as an individual of exceptional ability, having met his burden of proving that he possesses a degree of expertise significantly superior to that ordinarily encountered in the field of software engineering, cloud infrastructure, and artificial intelligence integration.

The Proposed Endeavor

Mr. Alves proposes to advance technological modernization, digital infrastructure resilience, and artificial intelligence integration within the United States through the design, implementation, and optimization of artificial intelligence solutions, custom software platforms, cloud infrastructure environments, DevOps methodologies, and intelligent data systems. To operationalize this initiative, he intends to establish and lead a technology-based endeavor, Vertex Digital Systems LLC, which will serve as the platform through which his work will be developed and implemented.

His work focuses on enhancing operational efficiency, strengthening cloud infrastructure environments, deploying enterprise artificial intelligence workflows, improving system scalability, and supporting secure, high-performance digital operations within organizations operating in technology-dependent sectors, including corporate compliance, financial services, education, enterprise software, and digital platform industries.

The initiative he proposes centers on implementing artificial intelligence integration projects, custom software development, cloud infrastructure modernization, DevOps automation frameworks, and intelligent data platforms aimed at improving business productivity, reducing infrastructure inefficiencies, accelerating software release cycles, and optimizing system performance within corporate environments. By leveraging artificial intelligence models, cloud technologies, automation tools, "Infrastructure-as-Code" methodologies, container orchestration, and scalable digital architectures, Mr. Alves's work seeks to resolve the operational bottlenecks, legacy infrastructure limitations, software delivery delays, and data fragmentation challenges frequently encountered by organizations operating complex digital systems.

The core mission of Vertex Digital Systems LLC is to design, implement, and optimize high-performance software systems and intelligent digital platforms that enable American companies to operate with greater scalability, reliability, security, and cost-efficiency. Through this mission, Mr. Alves seeks to support the modernization of digital operations and the strengthening of resilient, technologically advanced environments capable of supporting increasingly complex enterprise demands.

This initiative represents a direct extension of his expertise in software engineering and computer networks, particularly in distributed software architecture, artificial intelligence workflow integration, cloud computing, DevOps automation, continuous integration and deployment pipelines, and digital infrastructure modernization. Throughout his professional career of more than fifteen years, Mr. Alves has accumulated extensive experience in the design, development, management, and optimization of complex software systems and cloud environments utilized in enterprise compliance platforms, educational technology services, high-concurrency transactional architectures, and large-scale operational settings.

The technology sector is widely recognized as an area of substantial economic importance, serving to underpin innovation, operational efficiency, digital transformation, and infrastructure modernization across multiple industry segments. In this context, Mr. Alves's work contributes to the advancement of artificial intelligence applications, cloud modernization practices, software delivery automation, and scalable digital environments within the United States.

In addition to fostering technological modernization, his work promotes workforce participation through the development and implementation of technological solutions that require the engagement of professionals in the fields of software engineering, cloud architecture, DevOps operations, artificial intelligence development, cybersecurity, and digital systems management. By contributing to the expansion of technology-driven operational and infrastructure modernization initiatives, his efforts support broader economic and technological development.

The company will operate through five service lines:

- Artificial Intelligence Integration and Business Process Automation: Vertex Digital Systems LLC will implement artificial intelligence solutions that automate repetitive tasks, streamline business operations, and improve decision-making capabilities. Services will include AI-powered assistants, intelligent workflow automation, document processing systems, enterprise knowledge platforms, and large language model (LLM) integrations designed to increase productivity and reduce operational inefficiencies.
- Custom Software and SaaS Platform Development: The company will develop custom software applications and SaaS platforms that support digital transformation initiatives and operational growth. Solutions will include web and mobile applications, enterprise software systems, API integrations, platform modernization projects, and scalable cloud-native applications tailored to the operational requirements of client organizations.
- Cloud Infrastructure Modernization and Deployment: Vertex Digital Systems LLC will design, deploy, and optimize cloud and hybrid infrastructure environments that improve system reliability, scalability, and operational efficiency. Services will include cloud migration, infrastructure automation, Kubernetes implementation, Infrastructure-as-Code deployment, disaster recovery planning, and performance optimization initiatives.
- DevOps and Software Delivery Optimization: The company will implement DevOps frameworks that improve software delivery processes and operational stability. Services will include CI/CD pipeline development, deployment automation, environment standardization, monitoring and observability implementation, infrastructure orchestration, and software lifecycle optimization to support faster and more reliable technology deployment.
- Intelligent Data Platforms and AI Agent Development: Vertex Digital Systems LLC will develop intelligent data platforms and AI-driven systems that help organizations collect, process, analyze, and utilize information more effectively. Services will include AI agent development, retrieval-augmented generation (RAG) systems, automated data extraction platforms, business intelligence integration, predictive analytics environments, and enterprise knowledge management solutions that support data-driven operations and workforce efficiency.

Further details regarding the company's operational strategy, market positioning, and anticipated contributions to the U.S. technology ecosystem can be found in the attached Business Plan (Exhibit C.I) and will also be thoroughly examined in the following sections discussing the substantial merit and national importance of the proposed endeavor.

The Connection Between Mr. Alves's Exceptional Ability and His Proposed Endeavor

As described in the USCIS Policy Alert of January 15, 2025, a National Interest Waiver (NIW) requires the petitioner to demonstrate that their proposed endeavor has substantial merit and national importance, and that they are well-positioned to bring it to fruition. Furthermore, the petitioner's qualifications must be directly aligned with the venture's objectives to justify a waiver of the employment offer and labor certification requirements.

Mr. Alves's proposed endeavor is directly connected to his extensive background in software engineering, cloud infrastructure, artificial intelligence integration, and DevOps automation, developed through more than a decade of progressively responsible professional experience in highly technical and commercially demanding environments. Throughout his career, he has consistently worked on projects involving artificial intelligence platform development, cloud migration, infrastructure automation, deployment optimization, and large-scale digital systems

supporting education technology, business compliance, digital identity, and e-commerce platforms.

His professional experience includes the design of autonomous AI agents for regulatory compliance automation, the development of deployment pipelines achieving zero percent failure rates, the migration of enterprise platforms to managed Kubernetes environments with demand-based autoscaling, and the modernization of biometric identification and digital certification infrastructure processing hundreds of millions of transactions annually. The documentary record further demonstrates measurable operational results associated with his work, including infrastructure cost reductions, tenfold increases in backend processing performance, and substantial improvements in customer retention resulting from the technical capabilities he architected.

The technical competencies demonstrated throughout Mr. Alves's career directly correspond to the activities involved in his proposed endeavor. His experience with artificial intelligence integration, cloud-native architectures, Infrastructure-as-Code methodologies, Kubernetes environments, and automation frameworks provides the precise technical foundation necessary to implement scalable and reliable technology solutions within Vertex Digital Systems LLC's five core service lines: artificial intelligence integration and business process automation, custom software and SaaS platform development, cloud infrastructure modernization and deployment, DevOps and software delivery optimization, and intelligent data platforms and AI agent development.

Moreover, Mr. Alves's background demonstrates not only technical expertise but also the practical ability to apply advanced software engineering and infrastructure methodologies in real-world commercial settings. Recommendation letters issued by senior technology professionals consistently recognize his ability to solve complex engineering challenges, translate technical solutions into measurable business outcomes, modernize digital environments, and implement scalable systems capable of supporting mission-critical operations.

In addition, Mr. Alves's professional trajectory reflects sustained technical specialization, progressive leadership responsibilities, and market recognition within the information technology field. His plan to found and direct Vertex Digital Systems LLC further demonstrates his ability to structure a technology organization, define service offerings aligned with market demand, and lead the delivery of artificial intelligence, cloud infrastructure, and automation solutions addressing the operational needs of American businesses.

Consequently, the record establishes a direct relationship between Mr. Alves's exceptional ability and his proposed endeavor, demonstrating that his specialized expertise, technical background, and professional experience position him to successfully advance artificial intelligence adoption, cloud infrastructure modernization, and scalable digital transformation initiatives within the United States.

3. THE NATIONAL INTEREST WAIVER

Framework Under Matter of Dhanasar

Those who apply for a National Interest Waiver request that the Labor Certification requirement be waived because it would be in the best interest of the United States to allow the beneficiary to pursue their proposed endeavor without the restrictions of a permanent job offer. While the law

does not strictly define the types of occupations that qualify for a National Interest Waiver, such waivers are generally granted to individuals who possess an advanced degree or exceptional ability in their field and whose work in the United States would provide tangible national benefits.

According to section 203(b)(2)(B) of the Immigration and Nationality Act, the Secretary of Homeland Security may waive the job offer requirement, and consequently the labor certification requirement, when it is determined to be in the national interest of the United States. See 8 C.F.R. § 204.5(k)(4)(ii).

In Matter of Dhanasar, 26 I&N Dec. 884 (AAO 2016), the USCIS Administrative Appeals Office (AAO) established a revised analytical framework for determining eligibility for a discretionary waiver of the job offer and labor certification requirements for aliens seeking classification in the EB-2 category as individuals of exceptional ability in the sciences, arts, or business. Under this framework, eligibility for a National Interest Waiver is assessed through a three-pronged test:

(i) The first prong assesses whether the proposed endeavor has substantial merit and national importance.

(ii) The second prong assesses whether the individual is well-positioned to advance the proposed endeavor.

(iii) The third prong considers whether, on balance, it would be beneficial to the United States to waive the job offer and labor certification requirements.

Mr. Alves, as a professional of exceptional ability in software engineering, cloud infrastructure, artificial intelligence integration, and DevOps automation, clearly meets this analytical framework. His extensive experience in cloud environments, artificial intelligence platform development, infrastructure automation, and digital systems modernization uniquely positions him to contribute to the advancement of artificial intelligence adoption and digital infrastructure modernization in the United States.

Through the implementation of artificial intelligence integration, cloud infrastructure modernization, software development, and automation solutions, Mr. Alves's work supports U.S. priorities related to technological innovation, digital transformation, workforce development, and economic competitiveness. His work, developed through Vertex Digital Systems LLC, will help organizations improve operational efficiency, strengthen digital capabilities, reduce technological inefficiencies, and accelerate the adoption of artificial intelligence and cloud-based solutions, while also creating high-skilled employment opportunities and generating tax contributions within the U.S. economy.

Given the substantial merit of Mr. Alves's proposed endeavor and its alignment with these national priorities, a waiver of the job offer and labor certification requirements is fully justified. The following sections will demonstrate how Mr. Alves's proposed endeavor satisfies each of the three criteria established under the Dhanasar framework, thereby establishing his eligibility for a National Interest Waiver.

3.1 First PRONG:
The Proposed Endeavor has Substantial Merit and National Importance

Matter of Dhanasar moved away from the purely geographical consideration of "national in scope,"

to a broader evaluation of the endeavor's "national importance," no longer considering whether the endeavor would benefit the entire geographic region of the country (national scope), but instead determining whether the endeavor seeks to solve a problem that affects the entire country, even if the immediate impact is focused on one local geographic area ("national importance"), as follows:

> *"Certain locally or regionally focused endeavors, however, may be of national importance despite being difficult to quantify with respect to geographic scope."*

Therefore, the first prong, substantial merit and national importance, focuses on the specific endeavor that the foreign national proposes to undertake. The endeavor's merit may be demonstrated in a range of areas such as business, entrepreneurialism, science, technology, culture, health, or education. To establish that an endeavor has substantial merit, the petitioner should provide a detailed description of the endeavor and why it is meritorious. In determining whether the proposed endeavor has national importance, USCIS considers its potential impact.

Likewise, the Dhanasar decision allowed for the consideration of a much broader and more diverse pool of petitioners in a wide range of areas such as business, entrepreneurship, science, technology, culture, health, or education.

3.1.1 BUSINESS PLAN

A detailed description of the proposed endeavor and why it is of substantial merit:

Vertex Digital Systems LLC, which will be led by Mr. Alves, is a technology initiative designed to generate significant operational, technological, and economic impact in the United States. As detailed in the Business Plan, the proposed endeavor focuses on the implementation of artificial intelligence solutions, custom software and SaaS platforms, cloud and hybrid infrastructure modernization, DevOps and software-delivery optimization, and intelligent data platforms designed to help organizations improve scalability, reliability, security, and cost efficiency within increasingly complex digital environments.

The artificial intelligence, software engineering, cloud computing, and digital transformation sector is nationally recognized as an area of substantial economic importance, supporting innovation, operational continuity, digital transformation, and scalable technology development across multiple industries. Mr. Alves's proposed endeavor directly aligns with these national interests by supporting organizations that depend on stable, efficient, and resilient digital systems, particularly within sectors such as corporate compliance, financial services, education, enterprise software, and digital platform industries.

In addition to its software engineering and infrastructure modernization activities, the proposed endeavor will support workforce participation through the engagement of professionals in software engineering, artificial intelligence, cloud infrastructure, DevOps operations, data engineering, project management, business development, and administrative operations. By helping organizations modernize infrastructure environments, automate operational processes, optimize cloud systems, and improve system reliability, the endeavor contributes to the resilience, efficiency, competitiveness, and scalability of the U.S. digital technology ecosystem.

Taken together, these elements demonstrate that the proposed endeavor has substantial merit, as it promotes digital infrastructure modernization, operational resilience, cloud optimization, artificial intelligence integration, technological innovation, operational efficiency, and workforce participation in highly specialized technology fields, all areas directly aligned with the national and regional economic priorities of the United States.

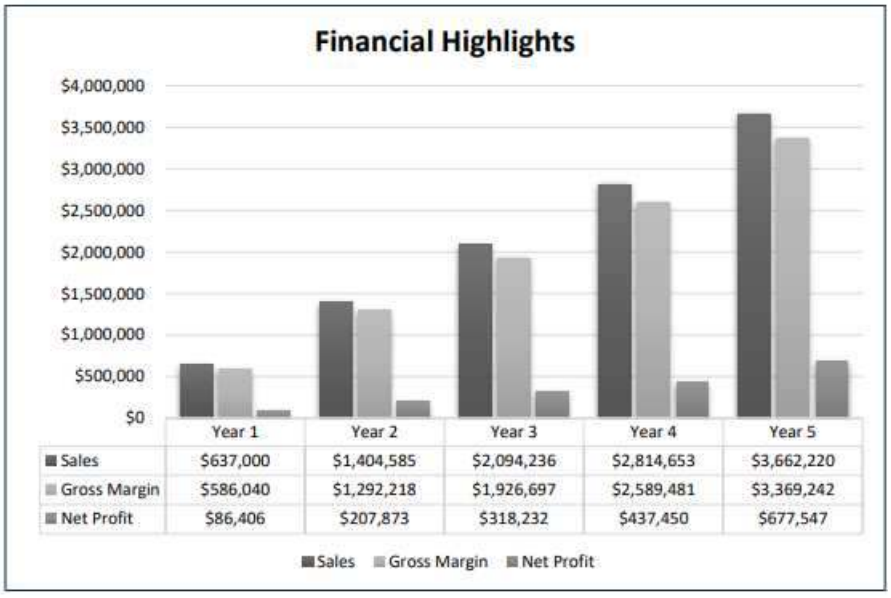
The proposed endeavor will operate across five main service areas:

- Artificial Intelligence Integration and Business Process Automation: including development of AI-powered assistants, intelligent workflow automation tools, large

language model (LLM) integrations, retrieval-augmented generation (RAG) platforms, AI agents, and document-processing solutions;

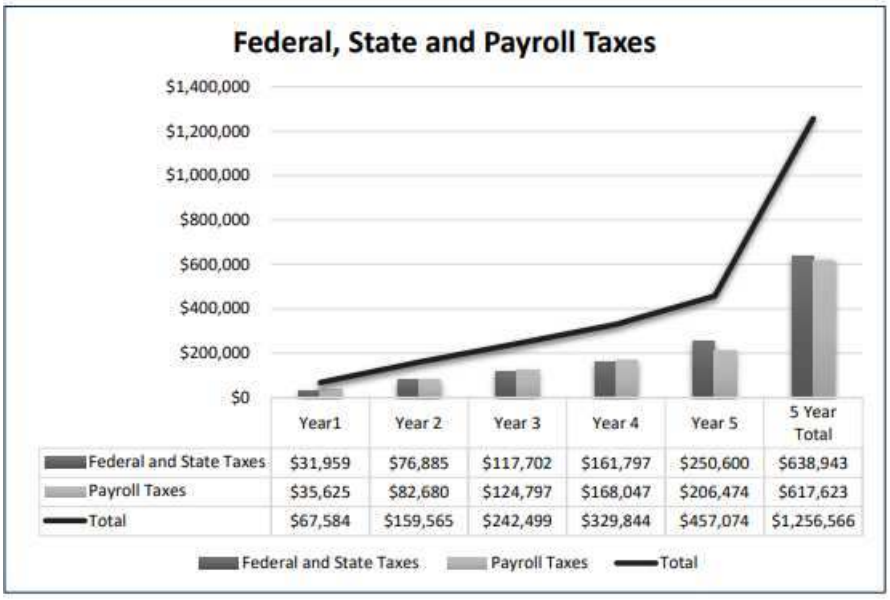
- Custom Software and SaaS Platform Development: including custom web and enterprise application development, SaaS platform architecture, API development, system integration, software modernization, and scalable cloud-native applications;
- Cloud Infrastructure Modernization and Deployment: including cloud migration planning, cloud and hybrid architecture design, Infrastructure-as-Code (IaC) implementation, Kubernetes containerized environments, cloud security configuration, infrastructure monitoring, and disaster recovery planning;
- DevOps and Software Delivery Optimization: including CI/CD pipeline development, deployment automation, release management, infrastructure orchestration, configuration management, observability systems, and software lifecycle optimization;
- Intelligent Data Platforms and AI Agent Development: including intelligent data extraction and processing systems, business intelligence and analytics platforms, enterprise data integration, predictive analytics, enterprise knowledge management platforms, and AI agents.

Additionally, the business plan projects significant economic growth, with revenue expected to increase from $637,000 in Year 1 to approximately $3,662,220 by Year 5.



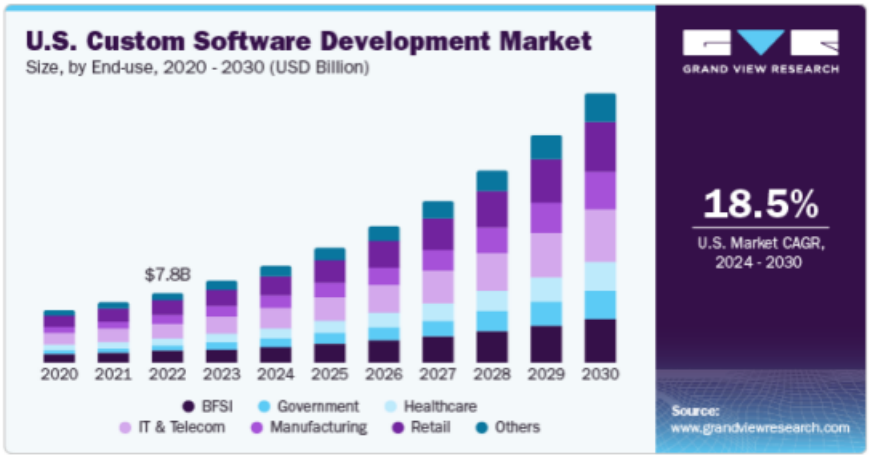
	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	$637,000	$1,404,585	$2,094,236	$2,814,653	$3,662,220
Gross Margin	$586,040	$1,292,218	$1,926,697	$2,589,481	$3,369,242
Net Profit	$86,406	$207,873	$318,232	$437,450	$677,547

The company is also projected to generate substantial tax contributions, totaling $1,256,566 in federal, state, and payroll taxes over five years.



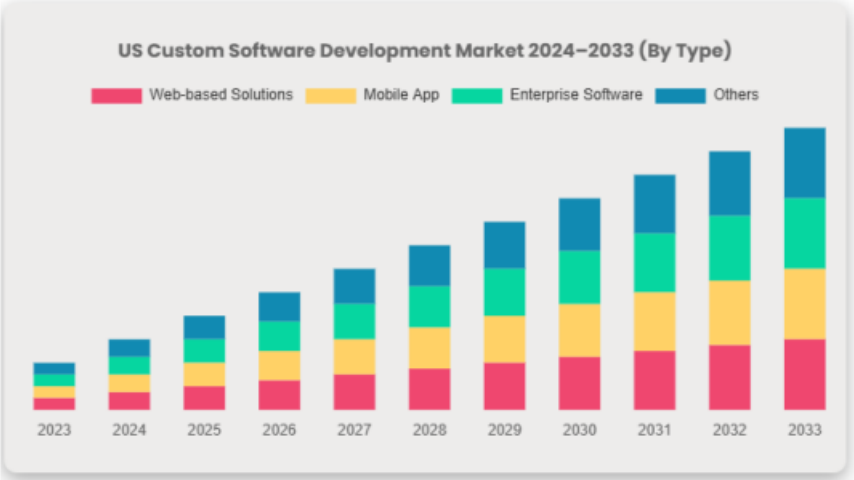
	Year1	Year 2	Year 3	Year 4	Year 5	5 Year Total
Federal and State Taxes	$31,959	$76,885	$117,702	$161,797	$250,600	$638,943
Payroll Taxes	$35,625	$82,680	$124,797	$168,047	$206,474	$617,623
Total	$67,584	$159,565	$242,499	$329,844	$457,074	$1,256,566

In addition, the U.S. custom software development and cloud technology sector represents a critical component of the national economy and continues to experience substantial growth driven by increasing enterprise dependence on software platforms, digital environments, automation systems, and scalable infrastructure technologies. According to Grand View Research, the U.S. custom software development market was valued at approximately USD 9.08 billion in 2023 and is projected to grow at a compound annual growth rate (CAGR) of 18.5% between 2024 and 2030, reflecting continued nationwide investment in software modernization and digital transformation.[6]

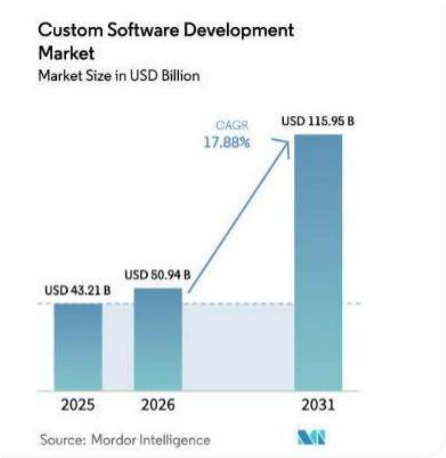


Likewise, market studies indicate that the U.S. custom software development market reached approximately $15.2 billion in 2024 and is projected to exceed $54.2 billion by 2033, demonstrating strong long-term expansion driven by digital transformation initiatives and the growing need for customized business applications.[7]

[6] https://www.grandviewresearch.com/industry-analysis/us-custom-software-development-market-report
[7] https://www.custommarketinsights.com/report/us-custom-software-development-market/



Globally, the custom software development industry is also experiencing rapid growth, with market estimates indicating that the sector may exceed $115.95 billion by 2031, with annual growth rates of approximately 17.88% CAGR.[8]





Artificial intelligence has emerged as one of the most significant drivers of technology investment in the United States. According to PwC, AI technologies could contribute up to $15.7 trillion to the global economy by 2030, while U.S. organizations continue to accelerate investments in generative AI, intelligent automation, predictive analytics, and AI-powered decision-support systems.[9]

These market trends demonstrate the increasing national demand for professionals capable of implementing scalable software architectures, cloud infrastructure, automation systems, intelligent data platforms, and artificial intelligence solutions. Accordingly, Mr. Alves's proposed endeavor possesses substantial merit because it directly contributes to improving the scalability, reliability, security, efficiency, and operational performance of digital systems utilized across critical sectors of the U.S. economy.

[8] https://www.mordorintelligence.com/industry-reports/custom-software-development-market
[9] https://mexicobusiness.news/tech/news/ai-increase-business-earnings-pwc

Beyond its economic importance, the software engineering, cloud computing, DevOps, and artificial intelligence sectors continue evolving toward increasingly complex, scalable, and automation-driven environments, with organizations placing growing emphasis on operational efficiency, infrastructure reliability, system modernization, and resilient digital operations. These trends reinforce the increasing demand for advanced software engineering, cloud architecture, automation frameworks, data platforms, and AI deployment practices capable of supporting modern enterprise technology environments.

Mr. Alves's work directly supports these industry trends by helping organizations modernize legacy software environments, implement artificial intelligence capabilities, automate business processes, improve cloud infrastructure, and utilize data more effectively. Through the implementation of scalable and high-performance digital solutions, his work contributes to improving operational productivity, reducing inefficiencies, strengthening system reliability, and supporting the performance of technology-dependent business operations.

Furthermore, the proposed endeavor supports workforce participation in highly specialized technology areas through activities involving artificial intelligence integration, software development, cloud infrastructure management, DevOps operations, automation technologies, project coordination, sales, customer support, and administrative operations. The implementation of these technologies and operational practices contributes to the modernization and continued advancement of enterprise digital environments utilized across multiple sectors of the economy.

Finally, as a technology professional with more than fifteen years of experience in software engineering, cloud infrastructure, DevOps, systems architecture, and artificial intelligence implementation, Mr. Alves is a STEM professional leading a high-impact initiative with direct implications for software modernization, artificial intelligence adoption, cloud infrastructure resilience, operational automation, and scalable digital systems in the United States.

Mr. Alves's academic background, technical training, certifications, and proposed endeavor are aligned with STEM fields designated by the U.S. Department of Homeland Security (DHS), particularly:

- 11.0701 - Computer Science: This field directly corresponds to Mr. Alves's professional work involving software engineering, distributed systems, algorithms, artificial intelligence integration, cloud computing, and software architecture.
- 11.0101 - Computer and Information Sciences, General: This field directly corresponds to Mr. Alves's academic training in information systems, computer systems, software development principles, and systems analysis.
- 11.0902 - Cloud Computing / 11.0103 - Information Technology: These fields directly correspond to Mr. Alves's formal technical education in communications networks and systems security, as well as his practical expertise in cloud infrastructure modernization, DevOps delivery optimization, and enterprise infrastructure management.

These classifications confirm that both Mr. Alves's professional background and proposed endeavor are firmly rooted within recognized STEM fields, reinforcing that the proposed endeavor directly relates to strategically important technology sectors involving software engineering, artificial intelligence adoption, cloud infrastructure, automation, and digital transformation.

It also highlights the STEM relevance and national importance of Mr. Alves's field, further supporting the first prong of Dhanasar fulfillment of his proposed endeavor. The USCIS Policy

Manual, in its updated guidance regarding EB-2 National Interest Waivers for STEM professionals, underscores the significance of contributions from individuals like Mr. Alves:

> USCIS recognizes the importance of progress in STEM fields and the essential role of persons with advanced STEM degrees in fostering this progress, especially in focused critical and emerging technologies or other STEM areas important to U.S. competitiveness or national security.
>
> To identify a critical and emerging technology field, officers consider governmental, academic, and other authoritative and instructive sources, and all other evidence submitted by the petitioner. The lists of critical and emerging technology subfields published by the Executive Office of the President, by either the National Science and Technology Council or the National Security Council, are examples of authoritative lists. Officers may find that a STEM area is important to competitiveness or security in a variety of circumstances, for example, when the evidence in the record demonstrates that an endeavor will help the United States to remain ahead of strategic competitors or current and potential adversaries, or relates to a field, including those that are research and development-intensive industries, where appropriate activity and investment, both early and later in the development cycle, may contribute to the United States achieving or maintaining technology leadership or peer status among allies and partners.
>
> With respect to the first prong, as in all cases, the evidence must demonstrate that a STEM endeavor has both substantial merit and national importance. Many proposed endeavors that aim to advance STEM technologies and research, whether in academic or industry settings, not only have substantial merit in relation to U.S. science and technology interests but also have sufficiently broad potential implications to demonstrate national importance.

Collectively, these elements demonstrate that the proposed endeavor possesses substantial merit because it directly supports the advancement of software engineering, artificial intelligence adoption, cloud computing, digital infrastructure modernization, operational automation, and scalable enterprise technology environments in the United States. As recognized by the USCIS Policy Manual, STEM-related endeavors involving critical and emerging technologies may carry substantial national relevance where they contribute to U.S. technological competitiveness, infrastructure modernization, and long-term operational advancement.

Accordingly, Mr. Alves's proposed endeavor is positioned within a strategically important STEM field involving artificial intelligence, custom software development, cloud infrastructure, DevOps, and enterprise technology modernization, with significant potential to generate lasting technological, operational, and economic benefits within the United States.

3.1.2 NATIONAL OR EVEN GLOBAL IMPLICATIONS WITHIN A PARTICULAR FIELD:

The national importance of the venture proposed by Mr. Alves is demonstrated by its direct contribution to the modernization of digital infrastructure, the responsible integration of artificial intelligence, cloud optimization, software-delivery efficiency, data intelligence, and the advancement of scalable technological environments within the United States. As detailed in the Business Plan (Exhibit C.I), the proposed venture addresses operational, technological, and infrastructure challenges faced by organizations that increasingly rely on secure, automated,

reliable, and scalable digital systems to sustain business continuity, innovation, and operational efficiency.

By implementing artificial intelligence integration solutions, custom software platforms, cloud modernization initiatives, DevOps methodologies, infrastructure automation frameworks, intelligent data platforms, and AI-agent solutions, Mr. Alves's work will enable organizations to improve operational efficiency, reduce manual and repetitive processes, strengthen system reliability, optimize software delivery, enhance data accessibility, and support scalable digital operations. These outcomes directly support ongoing national priorities related to artificial intelligence adoption, digital transformation, cloud modernization, data-driven decision-making, operational resilience, and secure technology operations.

In summary, the venture proposed by Mr. Alves contributes to technological modernization, business productivity, infrastructure resilience, AI-enabled innovation, and the advancement of scalable digital operations, demonstrating relevance at regional, national, and potentially global

levels within the technology field. Through his specialized expertise in artificial intelligence, cloud computing, DevOps, software engineering, infrastructure automation, and digital systems reliability, Mr. Alves is well positioned to support organizations operating in increasingly complex digital environments that require efficient, reliable, secure, and scalable technological solutions.

The following points highlight the national importance of the proposed endeavor by Mr. Alves:

- **Advancing Artificial Intelligence Integration and Digital Modernization:** Mr. Alves's work supports the practical implementation of artificial intelligence tools, AI-enabled automation, intelligent assistants, custom software systems, and data platforms designed to improve the manner in which organizations process information, automate operations, and deliver services.

National Importance: The integration of practical and scalable AI solutions supports innovation, technological competitiveness, productivity, and the continued modernization of business operations across multiple sectors of the U.S. economy.

- **Strengthening Cloud Infrastructure, Operational Resilience, and Technology Reliability:** Through cloud modernization, hybrid infrastructure design, DevOps practices, Infrastructure-as-Code methodologies, monitoring systems, automation frameworks, and business-continuity planning, Mr. Alves's work helps organizations improve system reliability, operational continuity, deployment efficiency, and infrastructure performance.

National Importance: Reliable and resilient digital infrastructure is essential for organizations that depend on continuous technology operations, particularly those operating in financial services, healthcare, telecommunications, retail, professional services, and digital-platform environments.

- **Supporting Scalable Software, Data, and Automation Environments:** Mr. Alves's proposed endeavor contributes to the implementation of cloud-native applications, SaaS platforms, software integrations, APIs, intelligent data systems, deployment automation, and scalable operational frameworks capable of supporting organizations as their technological and business requirements expand.

National Importance: Scalable software, cloud, automation, and data environments are increasingly necessary to support enterprise modernization, digital transformation, technology-enabled commerce, and the operational demands of an economy that depends on secure and continuously available digital systems.

- **Promoting Advanced Technological Practices and Specialized Workforce Participation:** The proposed endeavor involves highly specialized activities related to artificial

intelligence integration, software engineering, cloud architecture, DevOps, infrastructure automation, intelligent data platforms, cybersecurity support, and digital operations management.

National Importance: The implementation and expansion of advanced technological practices promote participation in specialized STEM-related fields and contribute to the continued advancement of modern enterprise technology environments in the United States.

Taken together, these factors demonstrate that the venture proposed by Mr. Alves transcends routine commercial activity and possesses clear national importance. By supporting the adoption of artificial intelligence, the modernization of cloud and software environments, the development of intelligent data platforms, the improvement of operational resilience, and the implementation of scalable technology solutions, the endeavor aligns directly with U.S. technological, operational, and economic priorities. Consequently, the endeavor satisfies the national-importance requirement under the first prong of *Matter of Dhanasar*.

3.1.3 ENDEAVOR'S IMPACT

The Proposed Endeavor Has Significant Potential to Employ U.S. Workers:

Mr. Alves's proposed endeavor has significant potential to create employment opportunities for U.S. workers. As described in the Business Plan, Vertex Digital Systems LLC anticipates progressive growth in its personnel structure as it expands its technology, artificial intelligence, cloud modernization, DevOps, data-platform, and automation services. The company expects to engage professionals in specialized and operational positions, including AI Solutions Engineers, Software Developers, Cloud Infrastructure Engineers, DevOps Engineers, Data and Automation Engineers, Project Coordinators, Sales Representatives, Customer Service Representatives, and Administrative Managers. *(Exhibit C.I)*

The Business Plan projects that Vertex Digital Systems LLC will grow from approximately five employees during its first year of operations to approximately twenty employees by Year 5. *(Exhibit C.I, Business Plan.)* These projected positions involve both highly specialized STEM-related technology functions and business-support functions necessary to sustain the company's operations, client relationships, project delivery, and market expansion. Accordingly, the endeavor is expected to support workforce participation at several levels, including technical engineering, cloud and infrastructure operations, software development, data and automation, project management, sales, customer support, and administration.

Personnel Plan					
	Year 1	Year 2	Year 3	Year 4	Year 5
General Manager & AI Solutions Director - Mr. Guilherme Pereira da Silva Alves	1	1	1	1	1
Software Developers (Full-Stack Developers)	1	1	2	2	2
AI Solutions Engineer	1	1	2	2	3
Cloud Infrastructure Engineer	0	1	2	2	3
DevOps Engineer	0	1	1	2	2
Project Coordinator	1	1	1	2	2
Data & Automation Engineer	0	1	1	2	2
Sales Representative	1	1	1	2	2
Administrative Manager	0	1	1	1	1
Customer Service Representative	0	0	1	1	2
Total People	**5**	**9**	**13**	**17**	**20**

In evaluating the broader economic impact of job creation, it is critical to consider the direct positions generated by an enterprise as well as the indirect employment effects across related sectors. One standard approach to quantifying this extended impact is through the use of job multipliers, such as those developed by the Economic Policy Institute (EPI). The EPI job multiplier estimates how many additional jobs are supported in the broader economy for each direct job created in a given industry. The *Computer Systems Design and Related Services* industry generates approximately 283.4 indirect jobs for every 100 direct jobs created. Based on the personnel projections outlined in the Business Plan, Mr. Alves's proposed endeavor anticipates the creation of approximately 20 direct jobs by Year 5, which corresponds to an estimated creation of approximately 56 indirect jobs throughout related sectors of the economy. *(Exhibit C.I)*[10]

Employment multipliers per 100 direct jobs, all private-sector industries

	Industry	Direct jobs	Supplier jobs*	Induced jobs**	Total indirect jobs
129	Computer systems design and related services	100.0	134.1	149.3	283.4
130	Management, scientific, and technical consulting services	100.0	91.1	116.5	207.6
131	Scientific research and development services	100.0	519.3	323.7	842.9
132	Advertising, public relations, and related services	100.0	460.9	270.7	731.6
133	Other professional, scientific, and technical services	100.0	70.8	83.6	154.3

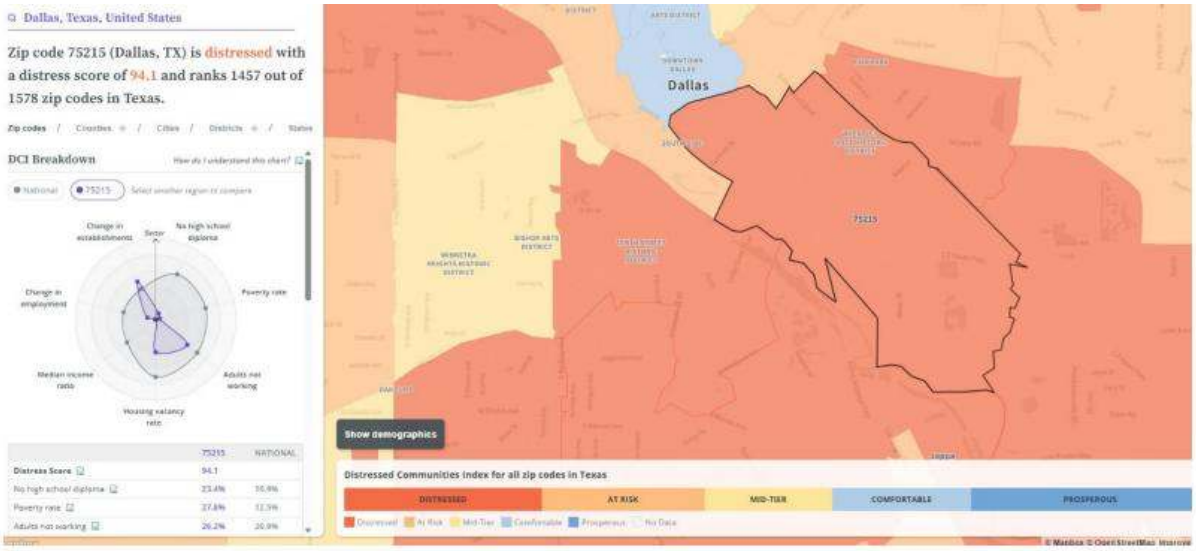
Please note that *Dhanasar* expressly states that one can prove national importance through the *"significant potential to employ U.S. workers"*. That is NOT the same as *"potential to employ a significant number of U.S. workers"* as the *"significance"* is in the *"potential"* or *"probability"*, not in the *"number of jobs"* the endeavor may create. This is a matter of semantics.

The *Dhanasar* framework recognizes that initiatives supporting infrastructure modernization, technological advancement, workforce participation, and operational development within strategically important sectors may qualify as endeavors of national importance. Mr. Alves's proposed endeavor directly aligns with these principles by supporting software modernization, artificial intelligence integration, cloud optimization, infrastructure automation, and scalable digital infrastructure environments within the United States.

In addition to direct employment, the proposed endeavor is expected to support indirect economic activity involving cloud-service providers, software vendors, cybersecurity providers, telecommunications services, data-management platforms, project-based technical contractors, and other businesses within the broader digital technology ecosystem. The company's work will require access to cloud-computing environments, software-development tools, data platforms, monitoring solutions, security-related technologies, communications services, and professional support services. These commercial relationships have the potential to generate indirect economic activity beyond the company's immediate workforce. *(Exhibit C.I)*

[10] https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/

Furthermore, the proposed endeavor is strategically connected to Dallas, Texas, including ZIP code 75215, an area identified as economically distressed under the Distressed Communities Index (DCI). According to the Business Plan, ZIP code 75215 has a DCI score of approximately 94.1, ranking 1457 out of 1578 zip codes in Texas, which reflects significant socioeconomic challenges affecting both local residents and the surrounding business environment. By developing technology and software operations connected to this region, the proposed endeavor is positioned to generate meaningful local economic impact through the creation of specialized and support-related employment opportunities within the technology sector.



The proposed endeavor directly supports workforce participation and economic activity in an area facing economic challenges by creating positions involving software engineering, artificial intelligence, cloud infrastructure, DevOps, project management, sales operations, administrative support, and customer service. In addition to highly specialized technology positions, the operation is expected to generate support and operational roles associated with business administration, communications, and customer operations, thereby contributing to broader workforce inclusion and economic participation.

Consistent with *Matter of Dhanasar*, endeavors that create U.S. jobs and stimulate economic activity within economically vulnerable regions may be considered nationally important. By supporting digital infrastructure modernization, workforce participation, operational development, and economic activity within an economically distressed area, Mr. Alves's proposed endeavor delivers clear regional and national benefits, further reinforcing its qualification for a National Interest Waiver.

Under Mr. Alves's leadership, the proposed endeavor will translate these broader economic and technological benefits into measurable operational outcomes through direct job creation, indirect economic activity, collaboration with cloud and software providers, engagement of project-based contractors, and the expansion of technology operations supporting modern digital infrastructure environments. These operational impacts demonstrate the endeavor's practical capacity to employ U.S. workers and generate sustained economic and technological value.

The Endeavor Impacts Matters Identified by Government Entities as National Priorities:

The proposed endeavor impacts matters that federal government entities have expressly identified as having national importance, particularly in the areas of cybersecurity, cloud infrastructure

modernization, artificial intelligence adoption, digital resilience, and advanced technology operations.

The current U.S. Administration has repeatedly emphasized the importance of strengthening America's digital infrastructure, accelerating technological modernization, securing critical systems, and reinforcing the nation's leadership in artificial intelligence, cybersecurity, and advanced computing environments. These priorities directly align with Mr. Alves's proposed endeavor involving custom software development, artificial intelligence integration, cloud modernization, DevOps delivery optimization, and scalable digital infrastructure operations.

In January 2025, Executive Order 14179, titled "Removing Barriers to American Leadership in Artificial Intelligence," established that it is the policy of the United States to sustain and enhance America's global leadership in artificial intelligence and advanced technology infrastructure. The Order specifically emphasizes accelerating innovation, modernizing infrastructure, and removing barriers affecting the development of advanced digital technologies.[11]

The White House further reinforced these priorities through the launch of America's AI Action Plan, which identifies "Building AI Infrastructure" and accelerating advanced digital infrastructure capabilities as central national objectives. The initiative specifically emphasizes modernization of digital systems, scalable infrastructure environments, cloud operations, secure software practices, and technological competitiveness within the United States.[12]

In addition, federal executive actions have focused on strengthening the Nation's cybersecurity, securing critical digital infrastructure, improving secure technology practices, and modernizing federal technology environments. The federal government specifically emphasized the need to defend digital infrastructure, improve secure software development, strengthen operational resilience, and modernize critical technology systems.

Moreover, official guidance issued by the Cybersecurity and Infrastructure Security Agency (CISA) recognizes that organizations implementing AI systems must address security, reliability, and resilience throughout the AI lifecycle. Its guidance emphasizes secure AI-system development, secure deployment practices, data security, and the protection of critical infrastructure against evolving AI-related threats.[13]

Likewise, the U.S. Department of Homeland Security (DHS) issued the "Roles and Responsibilities Framework for Artificial Intelligence in Critical Infrastructure," developed to guide the responsible and secure use of artificial intelligence across cloud providers, software developers, and enterprise operators.[14]

Furthermore, reports by the Congressional Research Service (CRS) emphasize that cloud computing and data-center infrastructure are integral components of the information-technology backbone supporting artificial intelligence and other digitally enabled services, characterizing this infrastructure as vital to national economic competitiveness and technological leadership.[15]

Taken together, these federal initiatives demonstrate a clear and ongoing national priority to modernize digital infrastructure, strengthen cybersecurity and operational resilience, expand

[11] https://www.whitehouse.gov/presidential-actions/2025/01/removing-barriers-to-american-leadership-in-artificial-intelligence/
[12] *https://www.whitehouse.gov/releases/2025/07/white-house-unveils-americas-ai-action-plan/*
[13] https://media.defense.gov/2024/Apr/15/2003439257/-1/-1/0/CSI-DEPLOYING-AI-SYSTEMS-SECURELY.PDF
[14] https://www.dhs.gov/publication/roles-and-responsibilities-framework-artificial-intelligence-critical-infrastructure
[15] https://www.congress.gov/crs-product/IF12580

artificial intelligence adoption, and support scalable and secure enterprise technology environments in the United States. Mr. Alves's proposed endeavor directly advances these federal objectives through custom software development, AI integration, cloud modernization, DevOps delivery optimization, and intelligent data systems designed to improve the reliability, scalability, efficiency, and security of digital operations.

Accordingly, the proposed endeavor is not only fully consistent with current federal policy objectives but actively advances national priorities repeatedly identified by federal entities as critical to the United States' technological competitiveness, digital infrastructure modernization, cybersecurity readiness, and long-term economic and operational resilience.

3.2 Second PRONG:
The Self-Petitioner is Well-Positioned to Advance the Proposed Endeavor in the United States

Under the second prong of *Matter of Dhanasar*, the Petitioner must demonstrate that he is well-positioned to advance his proposed endeavor. This does not require proof of guaranteed success, but rather credible evidence of qualifications, experience, skills, and progress already made toward implementation.

Supported by his extensive hands-on technical background, technical leadership in complex corporate environments, entrepreneurial initiative as the prospective Founder, General Manager, and AI Solutions Director of Vertex Digital Systems LLC, professional certification as a Zend Certified Engineer, formal professional membership in the Association for Computing Machinery (ACM), and strong recommendation letters issued by senior technology executives and engineering directors, Mr. Alves is exceptionally well-positioned to advance the proposed endeavor in the United States.

3.2.1 EDUCATION, SKILLS, KNOWLEDGE, AND RECORD OF SUCCESS:

Mr. Alves is exceptionally well-positioned to advance the proposed endeavor in the United States due to his extensive technical experience in software engineering, distributed systems architecture, cloud infrastructure, DevOps delivery optimization, and artificial intelligence integration within highly complex digital environments. He completed formal higher technical education in Communication Networks through the Federal Institute of Goiás (IFG) and further strengthened his specialization through a Postgraduate Degree in Computer Networks and System Security from the Federal University of Goiás (UFG), providing a rigorous academic foundation directly aligned with his career in computer science and distributed systems.

His qualifications are reinforced by industry-recognized credentials directly related to software engineering, cloud systems, and technical education. These include the Zend Certified Engineer (PHP) certification, a globally recognized credential distinguishing professionals with advanced expertise in enterprise software architecture and backend systems development. In addition, Mr. Alves has demonstrated his technical authority and commitment to community advancement through his role as an invited speaker at major technology conferences, including Latinoware (5th and 6th editions), FLISOL, and Campus Party, presenting on topics such as dependency management, distance learning platforms, and institutional system development using modern frameworks.

Over the course of more than thirteen years of full-time professional experience, Mr. Alves accumulated progressively advanced expertise in software development, cloud infrastructure, container orchestration, microservices design, and artificial intelligence integration while working in highly demanding environments across Brazil, Canada, and the United States. His professional trajectory includes progressively responsible technical and leadership roles, including Programmer

at Indra, Software Engineering Manager at Soluti, Intermediate Developer at Bold Commerce, Senior Software Engineer at Top Hat, Senior Software Engineer at Mosey, Staff Software Engineer at Gusto, and Founder, General Manager & AI Solutions Director of Vertex Digital Systems LLC.

His professional trajectory demonstrates a consistent record of practical and measurable operational success directly connected to the proposed endeavor. The documentary evidence establishes his participation in high-impact projects involving AI-powered compliance automation platforms, autonomous AI retrieval agents, microservices migration, CI/CD pipeline optimization, zero-percent failure deployment frameworks, and digital identity platforms supporting hundreds of millions of annual transactions. These activities resulted in measurable operational outcomes involving cloud infrastructure cost reductions of up to 23%, a 10x improvement in backend processing performance, a 30% reduction in defect rates, and a 50% improvement in frontend rendering speed.

In addition to his engineering accomplishments, Mr. Alves has demonstrated leadership, mentoring, and entrepreneurial capabilities through his role as Software Engineering Manager at Soluti, where he led a cross-functional team of fourteen developers, as a technical mentor for Lighthouse Labs guiding software professionals, and through his plan to found and manage Vertex Digital Systems LLC. The record reflects his ability to structure service lines, manage complex technical integration initiatives, and deliver scalable technology solutions for organizations operating in technology-dependent environments.

Mr. Alves's professional standing is further evidenced by his formal admission as a Professional Member of the Association for Computing Machinery (ACM), the world's premier educational and scientific computing society. This professional affiliation reflects his continued integration into the global computing community and further reinforces his established standing within the technology sector.

Furthermore, the documentary record establishes substantial market recognition of Mr. Alves’s expertise through compensation significantly exceeding market averages for comparable professionals in the software engineering, cloud architecture, and artificial intelligence integration sectors. Official tax assessment documentation issued by the Canada Revenue Agency (Notice of Reassessment for tax year 2025) and payroll records from Gusto Canada ULC demonstrate that Mr. Alves receives a regular semi-monthly compensation corresponding to an annual base salary of CAD $244,400.16 (approximately USD $173,321.15 per year). This level of earnings is more than double the national average compensation for a Software Engineer in Canada. This level of compensation, substantially above industry averages both locally and internationally, reflects the high market value associated with his specialized expertise in software architecture, cloud modernization, deployment automation, and artificial intelligence integration.

Looking ahead, Mr. Alves brings this same technical expertise, operational experience, architectural vision, leadership capability, and demonstrated record of success to the advancement of his proposed endeavor in the United States. His background in custom software engineering, artificial intelligence implementation, cloud infrastructure modernization, DevOps delivery optimization, and intelligent data systems directly aligns with the technological and operational demands of Vertex Digital Systems LLC.

In summary, Mr. Alves's formal academic credentials, extensive professional experience, industry certifications, demonstrated operational success, technical leadership, professional affiliation with the ACM, sustained market-recognized compensation, and specialized expertise in software engineering and artificial intelligence systems clearly establish that he is exceptionally well-

positioned to advance the proposed endeavor and successfully contribute to digital infrastructure modernization, AI adoption, and scalable technology operations in the United States.

3.2.2 SUPPORT LETTERS FROM INDUSTRY EXPERTS AND RECOGNITIONS:

Independent technology executives, engineering directors, software architects, and product leaders

from prominent technology organizations across North America and Brazil have provided detailed evaluations attesting to Mr. Alves's exceptional engineering capabilities, leadership, and record of success. These industry leaders confirm his ability to architect, build, modernize, and scale complex software applications, artificial intelligence platforms, cloud infrastructures, and automated deployment pipelines under demanding operational conditions.

Mr. Jeremy Heiler, Engineering Manager for Business Compliance Engineering at Gusto, supervised and collaborated with Mr. Alves at Mosey and through its subsequent acquisition by Gusto. Mr. Heiler highlights Mr. Alves's instrumental role in developing an AI-powered compliance platform, noting his leadership over the "Notices" product line featuring autonomous AI agents capable of processing government notices and navigating agency portals. He emphasizes that Mr. Alves successfully automated deployment pipelines to achieve a zero percent failure rate, reduced cloud infrastructure costs by approximately 23 percent, increased backend processing performance tenfold, and directed the migration of core systems into managed Kubernetes environments within Gusto's infrastructure. (Exhibit B.VI, Jeremy Heiler Support Letter.)

Mr. Reinaldo Borges de Freitas, Chief Technology Officer at Soluti Digital, served as Information Technology Director during Mr. Alves's tenure managing the core software development team. Mr. Borges de Freitas attests to Mr. Alves's leadership over a team of fourteen engineers and his technical oversight in developing digital certification and biometric identification systems operating at significant scale, within a biometric system that supports more than 10 million registrations and verifications annually (approximately one quarter through Soluti's platform) and a broader certification infrastructure that processes approximately 590 million transactions annually. He confirms that Mr. Alves's architectural modernizations contributed to expanding the company's network of representatives from 20 to over 100, increasing certificate issuance fivefold from 100,000 to 500,000 annually, and achieving a 30 percent reduction in unit operational costs. (Exhibit B.VI, Reinaldo Borges de Freitas Support Letter.)

Ms. Renee Fisher, Vice President of Engineering at Coconut Software and former Vice President of Engineering at Top Hat, evaluated Mr. Alves's technical contributions and engineering leadership across high-scale educational technology platforms. Ms. Fisher highlights Mr. Alves's advanced technical command in implementing AI-enabled question generation features and core platform functionality, noting that his architectural designs established benchmarks for automated, high-scale, and reliable system performance. She emphasizes his professional maturity in establishing observability infrastructure, creating reusable software frameworks, and ensuring the long-term scalability of mission-critical software ecosystems. (Exhibit B.VI, Renee Fisher Support Letter.)

Mr. Sean Michael Fahey, Senior Engineering Manager at Top Hat, supervised Mr. Alves as a foundational member and technical lead of a specialized engineering team. Mr. Fahey confirms that Mr. Alves served as the primary architect for critical platform features, whose timely and robust delivery proved essential in securing institutional customer contracts and supporting commercial growth. He further emphasizes Mr. Alves's contributions to observability and monitoring frameworks, which directly supported a customer renewal rate exceeding 90 percent,

as well as his active mentorship of junior engineers in distributed system design and disciplined software development practices. (Exhibit B.VI, Sean Michael Fahey Support Letter.)

Mr. Gord Currie, former Senior Software Engineering Manager at Axon Public Safety, managed Mr. Alves at Bold Commerce within microservices-based e-commerce environments. Mr. Currie underscores Mr. Alves's full-stack technical versatility across containerized Docker and Kubernetes infrastructures, highlighting his significant role in upgrading enterprise subscription applications and integrating complex global payment platforms including Stripe, Spreedly, and Braintree. He describes Mr. Alves as a disciplined engineer whose rigorous use of test-driven development, load testing, and systematic code reviews ensured high reliability and resilience across high-volume digital commerce systems. (Exhibit B.VI, Gord Currie Support Letter.)

Mr. Dex Getson, Software Development Manager at Bold Commerce, led the Subscriptions team to which Mr. Alves was assigned as an Intermediate Developer. Mr. Getson explains that the Subscriptions application processed over forty million dollars in transactions each month and that Mr. Alves contributed to improving its architecture by reducing unnecessary database connections and optimizing webhook processing, played a central role in refactoring and stabilizing a large, customized legacy codebase during the upgrade from PHP 5.6 to PHP 7, and implemented 3D Secure authentication for Stripe transactions to strengthen payment security and support PCI DSS compliance requirements. He describes Mr. Alves as combining technical depth with a strong sense of ownership over long-term system health. (Exhibit B.VI, Dex Getson Support Letter.)

Mr. Adrian Gazzoli, Group Product Manager at Top Hat, worked directly with Mr. Alves on product engineering initiatives. Mr. Gazzoli highlights Mr. Alves's leadership in modernizing legacy architectures and developing a scalable question builder platform, which accelerated feature delivery cycles by approximately four months. He emphasizes Mr. Alves's full-stack mastery across Python, PHP, and React, his Zend Certified Engineer credentials, his attention to complex business logic, and his consistent ability to bridge technical architecture with strategic business requirements. (Exhibit B.VI, Adrian Gazzoli Support Letter.)

Although these industry leaders represent different market segments, organizations, and technical specializations, their independent evaluations are remarkably consistent. Collectively, they describe Mr. Alves as a senior software architect and technology leader capable of delivering high-impact solutions in artificial intelligence integration, custom software engineering, cloud modernization, DevOps automation, and intelligent data systems. Their direct testimonies establish that the specialized expertise Mr. Alves demonstrated throughout his career aligns directly with the core services of his proposed endeavor through Vertex Digital Systems LLC.

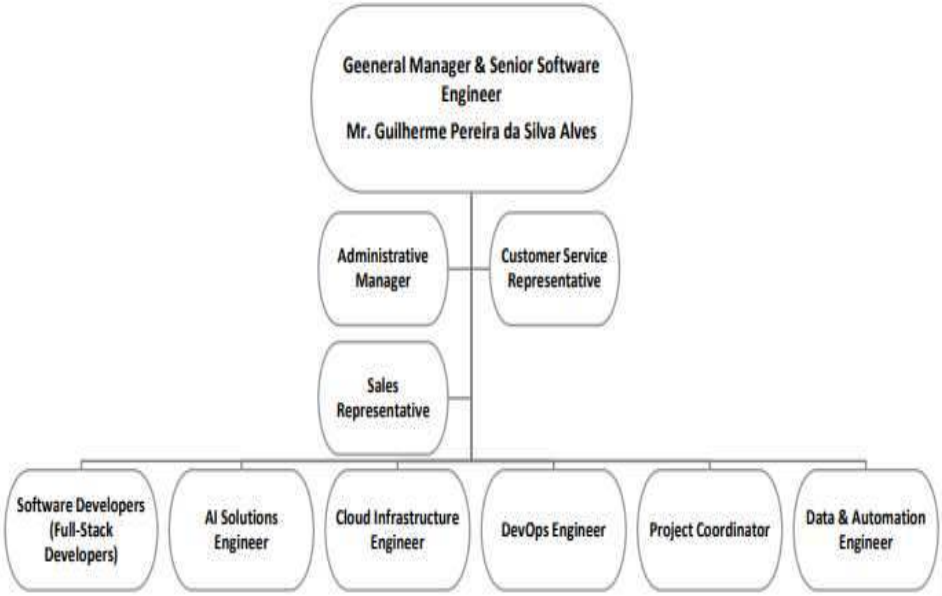
Taken together, these expert evaluations provide objective, third-party confirmation that Mr. Alves possesses the technical acumen, practical experience, leadership capability, and proven record of success necessary to advance his proposed endeavor in the United States, thereby fully satisfying the second prong of *Matter of Dhanasar*.

3.2.3 PLAN FOR FUTURE ACTIVITIES AND FINANCIAL FEASIBILITY:

Mr. Alves will serve as General Manager & AI Solutions Director of Vertex Digital Systems LLC, and his technical leadership will be fundamental to the long-term development and operational growth of the proposed endeavor in the United States technology and artificial intelligence sectors. As described in the Business Plan, the proposed operation plans to progressively expand its artificial intelligence integration, custom software development, cloud infrastructure modernization, DevOps automation, and intelligent data platform services over the next five years, increasing its technical capabilities, expanding its client base, and strengthening its operational structure to meet the growing demand for scalable and reliable enterprise technology solutions.

His extensive experience in distributed systems architecture, artificial intelligence workflows, cloud infrastructure, and software delivery optimization will guide the continued expansion of the proposed endeavor, reinforcing its position as a specialized provider of AI integration, SaaS development, cloud modernization, and DevOps solutions in the United States. The operation follows a structured five-year growth plan designed to progressively increase operational capacity, technical sophistication, service capabilities, and workforce participation in response to Market demand.

The proposed operation will initially function with a lean technical and administrative structure under Mr. Alves's direct leadership and will progressively expand its workforce to support operational growth and increasing project demand. This expansion includes the hiring of specialized professionals in full-stack software development, artificial intelligence engineering, cloud infrastructure, DevOps pipelines, data automation, project management, sales operations, customer support, and administrative functions, thereby supporting scalability, operational efficiency, and the continued delivery of high-performance technology solutions.



The proposed operation was structured for long-term sustainability, with well-planned initial capital requirements totaling approximately US$ 70,000, as detailed in the Business Plan, ensuring a solid and efficient operational launch in the Dallas, Texas market. In support of this investment, Mr. Alves possesses personal financial resources derived from his sustained high-earning career as a senior technology professional, enabling him to self-fund the venture's initial requirements without dependence on external capitalization. As of the dates of the supporting statements, Mr. Alves held CAD $56,667.36 in a CIBC savings account (closing balance as of March 31, 2026) and CAD $66,824.32 in an IA Financial Group Tax-Free Savings Account (TFSA) investment portfolio (as of April 23, 2026), totaling CAD $123,491.68, or approximately USD 87,577 at the Central Bank of Brazil conversion rate applied in Section 2.4, which exceeds the USD $70,000 in startup capital required by the Business Plan. (Exhibit C.II, Financial Feasibility: CIBC Savings Account Statement, March 2026; IA Financial Group TFSA Investment Statement, April 2026; and Currency Conversion from the Central Bank of Brazil.)

Startup	
Requirements	
Startup Expenses	
Business Registration, Legal & Licensing	$3,500
Accounting and Tax Setup	$2,500
Business Insurance	$2,000
Website Development and Branding	$6,000
Marketing and Advertising (Initial Campaigns)	$6,000
Computers, Workstations, and IT Equipment	$12,000
Software Licenses and Development Tools	$10,000
Cloud Infrastructure and Hosting Setup	$6,000
Office Equipment and Furniture	$4,000
Total Startup Expenses	$52,000
Startup Assets	
Cash Required	$18,000
Startup Inventory	$0
Other Current Assets	$0
Long-term Assets	$0
Total Assets	$18,000
Total Requirements	**$70,000**

The financial feasibility of the Business Plan is further supported by Mr. Alves's personal liquid assets, which are documented in the record. According to the CIBC savings account statement for March 2026, Mr. Alves held a closing balance of CAD $56,667.36 as of March 31, 2026. In addition, the IA Financial Group Tax-Free Savings Account (TFSA) investment statement shows a portfolio value of CAD $66,824.32 as of April 23, 2026. Together, these accounts total CAD $123,491.68, equivalent to approximately USD $87,577 at the Central Bank of Brazil conversion rate used in this petition. This amount exceeds by more than USD $17,000 the USD $70,000 in initial capital required by the Business Plan (USD $52,000 in startup expenses and USD $18,000 in initial cash reserves). These funds are held in Mr. Alves's own name and do not depend on any external financing, demonstrating that he is able to fully self-fund the launch of Vertex Digital Systems LLC and sustain its initial operations. (Exhibit C.II, Financial Feasibility: CIBC Savings Account Statement, March 2026; IA Financial Group TFSA Investment Statement, April 2026; and Currency Conversion from the Central Bank of Brazil.)

These financial resources cover the projected startup capital requirements identified in the Business Plan and demonstrate Mr. Alves's financial capacity to support the implementation, operational development, and initial expansion of the proposed endeavor in the United States.

The allocated capital is structured to cover initial operating expenses, legal and administrative formation, hardware and software infrastructure, cloud service deployments, marketing initiatives, and initial cash reserves, thereby ensuring operational and financial stability during the launch phase of Vertex Digital Systems LLC. Together, Mr. Alves's professional earnings, financial capacity, and the structured operational plan described in the Business Plan demonstrate that the proposed endeavor is adequately capitalized, commercially viable, and strategically prepared to begin operations and support its projected growth in the United States.

Mr. Alves possesses the financial capability and professional independence to launch and sustain the proposed endeavor, further satisfying the second prong of Matter of Dhanasar. His combined technical expertise in software architecture, artificial intelligence integration, cloud modernization, and DevOps engineering, together with his proven record of technical execution in complex enterprise environments, demonstrates his ability to generate operational, technological, and

economic impact, support U.S. workforce growth, and contribute meaningfully to the advancement and competitiveness of the digital technology ecosystem in the United States.

3.3 Third PRONG:

On Balance, It Would be Beneficial to the United States to Waive the Requirement of a Job Offer and Labor Certification

Congress established the National Interest Waiver under Section 203(b)(2)(B) of the Immigration and Nationality Act to address the inherent limitations of the permanent labor certification (PERM)

process. When a foreign national offers contributions that extend beyond the scope of a traditional employment position and provides distinct benefits to strategically important sectors of the United States economy, permanent residency should not be denied simply because another worker could theoretically perform individual tasks within the domestic labor market.

Mr. Alves clearly exemplifies the principle underlying the third criterion of *Matter of Dhanasar*, 26 I&N Dec. 884 (AAO 2016). As a senior technology professional, software architect, and entrepreneur possessing exceptional ability across artificial intelligence integration, full-stack software development, cloud infrastructure modernization, DevOps delivery optimization, and

intelligent data systems, his proposed endeavor extends far beyond a conventional, single-employer technology position. Through the commercial operations of Vertex Digital Systems LLC, Mr. Alves seeks to advance the modernization, operational efficiency, and digital resilience of technology environments utilized by American businesses across multiple sectors of the economy.

Requiring Mr. Alves to undergo the labor certification process, despite the theoretical availability of technology workers in the domestic labor market, would overlook the distinct value of his entrepreneurial venture and specialized expertise. His unique combination of artificial intelligence integration, cloud modernization, distributed systems architecture, DevOps automation, technical leadership, and proven record of executing large-scale corporate modernizations is not readily replaceable through standard recruitment channels. Furthermore, because he seeks to advance his endeavor as an entrepreneur and founder through Vertex Digital Systems LLC, the traditional labor certification framework is fundamentally ill-suited to his proposed activities.

According to the analytical framework established under *Matter of Dhanasar*, adjudicators must conduct a balancing evaluation comparing the national interest in requiring a job offer and labor certification against the benefits of allowing the foreign national to advance important national priorities. Relevant factors identified by the AAO include:

- **Impracticality of a Job Offer or Labor Certification:** Whether, in light of the nature of the foreign national's qualifications or the proposed endeavor, it would be impractical to secure a job offer or obtain a labor certification;
- **Continued Benefit to the United States:** Whether, even assuming that other qualified U.S. workers are available, the United States would still benefit from the foreign national's unique contributions; and
- **Urgency or Substantiality of the National Interest:** Whether the national interest in the foreign national's contributions is sufficiently urgent or substantial to warrant forgoing the labor certification process.

The *Dhanasar* precedent emphasizes that these factors are not rigid requirements, but rather guiding considerations in determining whether, on balance, waiving the job offer and labor certification requirements serves the national interest of the United States.

The evidence submitted throughout this petition demonstrates that waiving the labor certification requirement is fully warranted:

First, the labor certification process exists to protect the domestic labor market by testing whether

qualified U.S. workers are available for a specific, pre-existing job opening. In the context of an entrepreneurial initiative such as Vertex Digital Systems LLC, the petitioner is not seeking to fill a static job vacancy that an existing employer is attempting to fill. Instead, Mr. Alves is establishing an enterprise that will create employment opportunities for U.S. workers, stimulate business-to-business commerce, and provide external technology modernizations to multiple American client organizations simultaneously. Requiring a traditional job offer and labor certification would be impractical and contrary to the entrepreneurial nature of the proposed endeavor.

Second, the United States will derive substantial benefits from Mr. Alves's specialized contributions regardless of general labor market conditions. His demonstrated expertise in developing autonomous AI agents, modernizing complex cloud ecosystems, engineering automated CI/CD deployment pipelines, and building resilient data architectures provides immediate, multi-client technological value. His work enhances the productivity, scalability, and security of American client businesses, yielding widespread economic and operational benefits that a single permanent employment position could not replicate.

Third, the national interest in advancing artificial intelligence adoption, cloud infrastructure modernization, software delivery optimization, and digital system resilience is both urgent and substantial. Federal executive actions, including Executive Order 14179 and *Winning the AI Race: America's AI Action Plan*, explicitly identify the rapid acceleration of AI infrastructure, cloud capacity, and secure software ecosystems as vital to U.S. economic competitiveness and technological leadership. Subjecting Mr. Alves to the prolonged administrative delays inherent in the PERM process would needlessly postpone the deployment of his specialized skills and the establishment of his enterprise.

The USCIS Policy Manual affirms that in evaluating the third prong for STEM and critical technology professionals, adjudicators should consider whether the petitioner's endeavor has the potential to support technological competitiveness, advance critical infrastructure, or generate broader economic benefits that outweigh the general policy of requiring a labor certification.

In conclusion, the documentary record establishes that Mr. Alves's proposed endeavor offers significant national benefits that transcend individual employment, aligns directly with key federal technology priorities, and possesses substantial potential for job creation and economic stimulation. These advantages substantially outweigh any administrative interest in requiring a labor market test. Therefore, granting a National Interest Waiver through the favorable exercise of discretion is fully justified.

3.3.1 IMPRACTICABILITY OF A LABOR CERTIFICATION:

Given the autonomous and entrepreneurial nature of the proposed endeavor, in which Mr. Alves will operate as the founder, managing director, and principal technical architect of Vertex Digital Systems LLC, the traditional labor certification process is entirely impractical. The permanent labor certification (PERM) framework administered by the Department of Labor was created to test the domestic labor market for qualified U.S. workers before a specific employer fills a pre-existing job opening. However, Mr. Alves is not seeking to occupy an established corporate vacancy or displace domestic labor. Instead, his endeavor is designed to establish an independent technology enterprise that will advance artificial intelligence integration, cloud modernization, software delivery optimization, data platform development, and infrastructure resilience, while

creating new employment opportunities and driving business-to-business technological advancement in the United States.

- **Nature of the Proposed Endeavor:** As a technology entrepreneur, software architect, and systems specialist, Mr. Alves is establishing a founder-led enterprise focused on providing high-impact digital solutions across five core service lines: Artificial Intelligence Integration and Automation, Custom Software and SaaS Development, Cloud Infrastructure Modernization, DevOps and Delivery Optimization, and Intelligent Data Platforms and AI Agents. This initiative is fundamentally distinct from a standard employer-employee relationship because its success depends directly on Mr. Alves's specialized engineering expertise, architectural vision, technical leadership, and proven record of modernizing enterprise systems. Rather than competing with domestic workers for an existing role, Mr. Alves's venture provides external technical capabilities to American businesses, enhancing their operational efficiency and creating new technical and administrative roles within the United States. (Exhibit C.I, Business Plan.)

- **Job Creation and Economic Impact:** The proposed endeavor is structured to generate direct and indirect employment as operations scale. According to the five-year projections set forth in the Business Plan, Vertex Digital Systems LLC anticipates expanding its team from approximately five professionals in Year 1 to twenty professionals by Year 5, creating positions for AI Solutions Engineers, Software Developers, Cloud Infrastructure Engineers, DevOps Specialists, Data and Automation Engineers, Project Coordinators, Technical Sales Representatives, and Administrative Managers. Furthermore, the company's operations will stimulate indirect economic activity through business partnerships and commercial expenditures involving cloud service providers, software vendors, data hosting platforms, cybersecurity services, telecommunications infrastructure, and project-based specialized contractors, thereby reinforcing broader economic activity and technical workforce participation in the U.S. technology sector. (Exhibit C.I, Business Plan.)

- **Self-Sustainability and Broader Contribution:** Through the commercial operations of Vertex Digital Systems LLC, Mr. Alves will establish financial self-sustainability while delivering tangible, multi-client benefits to the U.S. economy. By implementing scalable software architectures, automated CI/CD deployment pipelines, autonomous AI agent workflows, and resilient data infrastructure, the endeavor will support the technological modernization and operational continuity of client enterprises across critical sectors such as financial services, healthcare, telecommunications, retail, and enterprise digital platforms. Subjecting an entrepreneur of Mr. Alves's caliber to the rigid constraints and extended delays of the PERM process would hinder his ability to establish his business, serve client enterprises, and deploy these high-value technical capabilities.

Mr. Alves has presented comprehensive evidence documenting his established intent, technical capability, and financial readiness to operate as an independent technology entrepreneur and software architect in the United States. His proposed endeavor is structured to drive job creation, technological modernization, artificial intelligence adoption, and sustained economic growth within the digital infrastructure ecosystem. These foundational characteristics render the traditional labor certification requirement incompatible with the nature and purpose of his venture, strongly reinforcing his eligibility for a National Interest Waiver under the third prong of *Matter of Dhanasar*.

3.3.2 THE U.S. WOULD STILL BENEFIT FROM THE FOREIGN NATIONAL'S CONTRIBUTION EVEN IF QUALIFIED U.S. WORKERS ARE AVAILABLE:

Given Mr. Alves's extensive, fifteen-year background across artificial intelligence integration, custom software architecture, cloud infrastructure modernization, DevOps automation, and intelligent data systems, he is uniquely positioned to advance his proposed endeavor in the United States. While qualified technology professionals exist within the domestic labor market, Mr. Alves's specialized expertise, multi-disciplinary engineering background, and demonstrated operational accomplishments provide distinct and substantial benefits to the nation:

- **Exceptional Qualifications and Multi-Disciplinary Experience:** Mr. Alves possesses over thirteen years of full-time, progressively responsible experience spanning full-stack software development, distributed systems architecture, cloud infrastructure, container orchestration, CI/CD automation, and artificial intelligence integration. His career combines rigorous engineering capabilities with technical leadership developed through senior roles at prominent technology organizations, where he directed complex modernization projects and supervised technical delivery teams. This integration of software engineering, cloud architecture, and practical AI workflow implementation represents a specialized skill set that is not readily duplicated through conventional recruitment channels, making his prospective contributions strategically valuable to the continued advancement of enterprise digital systems in the United States. (Exhibit C.II; Exhibit B.II, Letters of Experience; Exhibit B.I, Academic Records and Credential Evaluation.)

- **Recognition and Proven Record of Success:** Throughout his career, Mr. Alves has established a documented history of executing high-impact technical initiatives across critical industry sectors, including business compliance, digital certification, e-commerce platforms, and educational technology ecosystems. Senior technology executives, engineering directors, and product managers have formally confirmed his ability to build autonomous AI agent platforms, architect mission-critical infrastructure, optimize software delivery pipelines to zero percent failure rates, reduce cloud operating costs by 23 percent, and lead systems processing hundreds of millions of annual transactions. (Exhibit B.VI, Letters of Recommendation from Jeremy Heiler, Reinaldo Borges de Freitas, Renee Fisher, Sean Fahey, Gord Currie, Dex Getson, and Adrian Gazzoli.)

- **Technical Expertise and Demonstrated Operational Impact:** Mr. Alves's documented achievements and the structured service lines of Vertex Digital Systems LLC demonstrate his capacity to design, implement, and scale modern technology solutions. His work directly enhances client productivity by automating manual operational workflows, modernizing legacy systems into resilient cloud-native architectures, accelerating release cycles through automated DevOps pipelines, and implementing intelligent data platforms that support data-driven decision-making. These capabilities directly enhance the competitiveness, operational stability, and digital resilience of technology-dependent businesses operating in the United States. (Exhibit C.I, Business Plan; Exhibit B.VI, Letters of Recommendation.)

- **Additional and Multi-Client Contributions:** While the domestic workforce includes competent individual engineers, Mr. Alves offers a comprehensive perspective that bridges technical architecture with business execution. As the founder and principal architect of Vertex Digital Systems LLC, he will not provide isolated technical labor to a single employer, but will

instead deliver high-level modernization solutions to multiple American enterprises simultaneously. His endeavor is structured to accelerate the adoption of practical artificial intelligence tools, strengthen digital infrastructure resilience, and create direct and indirect

employment opportunities for U.S. workers across technical and operational domains. (Exhibit C.I, Business Plan.)

In summary, Mr. Alves's specialized technical acumen, extensive background in distributed systems and cloud engineering, proven leadership in corporate digital transformations, and demonstrated record of measurable success distinguish him from conventional technology professionals. Through Vertex Digital Systems LLC, his contributions will advance artificial intelligence adoption, modernize digital and cloud infrastructure, stimulate specialized workforce participation, and reinforce the operational resilience of American businesses, confirming that the United States will derive significant benefits from his endeavor even assuming the theoretical availability of other qualified U.S. workers.

3.3.3 WHETHER THE NATIONAL INTEREST IN THE FOREIGN NATIONAL'S CONTRIBUTIONS IS URGENT ENOUGH TO JUSTIFY BYPASSING THE LABOR CERTIFICATION PROCESS:

The national interest in Mr. Alves's contributions is evident, immediate, and fully justifies waiving the labor certification process. His specialized expertise spanning artificial intelligence integration, custom software engineering, cloud infrastructure modernization, DevOps delivery optimization, and intelligent data systems, combined with his demonstrated ability to design, implement, and scale complex digital solutions, underscores the strategic and timely value his work brings to the United States.

Current Industry Needs: Organizations across the United States increasingly rely on advanced artificial intelligence capabilities, cloud infrastructure, automation systems, secure software delivery pipelines, and reliable data architectures to sustain business continuity, maintain competitiveness, and accelerate digital transformation. Simultaneously, American enterprises face

pressing challenges regarding legacy system constraints, inefficient manual workflows, complex deployment cycles, data fragmentation, scalability bottlenecks, and the urgent imperative to adopt practical artificial intelligence tools securely. Mr. Alves possesses more than fifteen years of comprehensive engineering experience in modernizing enterprise architectures, engineering autonomous AI agent systems, automating deployment pipelines, and building resilient data platforms. These multidisciplinary capabilities are in high demand and are not readily found in combination within the general labor market, making his skills directly aligned with the present technological and operational needs of the U.S. economy.

Immediate Economic and Operational Impact: The timely execution of Mr. Alves's proposed

endeavor through Vertex Digital Systems LLC will generate direct and tangible benefits, including the creation of specialized STEM employment, the acceleration of AI adoption for client businesses, the reduction of operational costs through workflow automation, and the enhancement of system reliability across technology-dependent sectors. Subjecting Mr. Alves to the prolonged administrative delays inherent in the permanent labor certification (PERM) process would needlessly stall the launch and expansion of an entrepreneurial venture specifically structured to address current productivity, modernization, and digital infrastructure challenges facing American businesses.

Industry Support and Documented Evidence: The documentary evidence submitted with this petition, including the comprehensive Business Plan, detailed advisory and support letters from prominent technology executives and engineering directors, academic evaluations, compensation records, and technical project documentation, substantiates the substantial relevance and urgency of Mr. Alves's work. His proven record of modernizing core software systems, engineering AI-

driven compliance tools, reducing infrastructure overhead, and maintaining fault-tolerant architectures across North American enterprises illustrates the immediate utility of his expertise and reinforces the necessity of removing unnecessary procedural hurdles that would delay his venture.

Strategic Advantage for the United States: Enabling Mr. Alves to advance his endeavor without the constraints of a traditional job offer or labor certification provides clear technological, economic, and operational advantages to the nation. Federal policy directives, including Executive Order 14179 (Removing Barriers to American Leadership in Artificial Intelligence) and Winning the AI Race: America's AI Action Plan, emphasize the vital importance of accelerating private-sector AI innovation, building robust computing infrastructure, and reinforcing American technological leadership. Vertex Digital Systems LLC directly supports these federal priorities by delivering practical AI integration, cloud modernization, and automated infrastructure solutions that empower U.S. client enterprises to scale securely and efficiently.

In summary, the national interest in Mr. Alves's contributions is compelling, strategic, and urgent. His unique combination of specialized software architecture, practical artificial intelligence integration, cloud and DevOps expertise, technical leadership, and demonstrated track record of delivering measurable operational enhancements fully justifies waiving the job offer and labor certification requirements. His direct leadership of Vertex Digital Systems LLC will advance digital modernization, foster workforce participation in critical STEM fields, enhance business productivity, and support the long-term technological competitiveness and economic resilience of the United States.

4. FINAL CONSIDERATIONS

From all topics discussed above and the attached evidence, it is "more likely than not" that:

1. The petitioner, Mr. Guilherme Pereira da Silva Alves, qualifies for EB-2 classification as an individual of exceptional ability in the STEM field of computer science and software engineering (CIP Code 11.0701). The evidence presented establishes that he satisfies at least three of the six regulatory criteria for exceptional ability, including academic background and technical education in computer networks and systems security, more than thirteen years of full-time professional experience, professional membership in the Association for Computing Machinery (ACM), remuneration significantly above market averages, industry certifications, and recognition by independent technology professionals. Taken as a whole, the dossier demonstrates that Mr. Alves possesses a level of expertise significantly superior to that ordinarily found in software engineering, artificial intelligence integration, cloud infrastructure, and DevOps automation.

2. The petitioner's proposed endeavor has substantial merit and national importance. In line with Matter of Dhanasar, Mr. Alves's proposed endeavor supports artificial intelligence integration, digital infrastructure modernization, cloud optimization, scalable technology environments, and the continued advancement of reliable and efficient enterprise software operations in the United States. His work directly contributes to technological modernization, workforce participation in highly specialized technology sectors, operational efficiency, and the strengthening of digital infrastructure environments utilized across multiple sectors of the U.S. economy.

3. The self-petitioner is well-positioned to advance the endeavor. Mr. Alves possesses more than thirteen years of full-time, progressively responsible professional experience in software engineering, distributed systems architecture, cloud computing, DevOps methodologies, and artificial intelligence implementations. He further demonstrates a strong record of success through professional affiliation with the ACM, substantial market-recognized compensation as a Staff

Software Engineer, entrepreneurial initiative in establishing Vertex Digital Systems LLC, documented technical achievements, independent expert support letters, sufficient financial resources, and extensive practical expertise directly related to the proposed endeavor.

4. On balance, it would be beneficial to the United States to waive the requirement of a job offer and labor certification. The labor certification process is impractical for entrepreneurial and multi-client technology initiatives such as the one proposed by Mr. Alves, whose role is not to fill a conventional employment position, but rather to support enterprise artificial intelligence adoption, digital infrastructure modernization, scalable cloud operations, and specialized workforce participation across multiple U.S. businesses. His proposed endeavor has clear potential to generate employment opportunities, stimulate economic and technological activity, support operational modernization, and contribute meaningfully to the advancement of modern software and digital infrastructure environments in the United States, thereby fully justifying a waiver of the labor certification requirement.

Through this petition, it is respectfully submitted that Mr. Guilherme Pereira da Silva Alves merits favorable consideration for a National Interest Waiver of the job offer and labor certification requirements pursuant to Section 203(b)(2)(B) of the Immigration and Nationality Act. Mr. Alves's technical expertise, software architecture leadership, substantial professional achievements, and demonstrated excellence as a professional of exceptional ability in software engineering, artificial intelligence integration, cloud infrastructure modernization, and DevOps automation uniquely qualify him to advance the proposed endeavor in the United States. His expertise directly benefits the technological, operational, and economic interests of the United States, reinforcing the importance of allowing him to continue applying his specialized knowledge and experience within the country. Because both his occupation and his proposed endeavor fall within the science, technology, engineering, and mathematics (STEM) field of Computer Science (CIP Code 11.0701), his contributions directly strengthen the U.S. STEM workforce and the nation's technological competitiveness.

We respectfully request favorable consideration of this Form I-140, immigrant visa petition, thereby qualifying Mr. Alves as a professional of exceptional ability under the second preference employment-based category, with a grant of a waiver of the labor certification requirement in the national interest of the United States.

Should you require any further information or documentation, please do not hesitate to contact my office. Thank you in advance for your kind assistance with this matter.

Sincerely,



Otavio Haverroth Silva

California Bar # 343486

Exhibit list

Exhibits:	Pages:
Exhibit A	
Resume	1-2

Exhibit B.I. Official academic record showing that you have a degree, diploma, certificate, or similar award from a college, university, school, or other institution of learning relating to your area of exceptional ability

Diploma in Network Communications, Federal Institute of Education, Science and Technology of Goiás, Brazil, and corresponding translation	3-11
Postgraduate Certificate in Computer Networks and Systems Security, Federal University of Goiás, Brazil, and corresponding translation	12-16
Academic Credential Evaluation of Guilherme Pereira da Silva Alves	17-40

Exhibit B.II. Letters documenting at least 10 years of full-time experience in your occupation

Letter of Experience – Gusto Canada ULC (2026 to Present)	41
Letter of Experience – Deel Canada Services Inc. (2024 to 2026)	42-43
Letter of Experience – Tophatmonocle Corp. (2021 to 2024)	44
Letter of Experience – Bold Commerce Inc. (2019 to 2021)	45
Letter of Experience – Soluti (2015 to 2019)	46
Letter of Experience – Indra (2013 to 2015)	47

Exhibit B.III. Professional certification

Zend Certified Engineer (PHP) Certification, 2017	48-49

Exhibit B.IV. Evidence of high salary or other significantly high remuneration

Canada Revenue Agency Notice of Reassessment for the 2025 Tax Year	50-54
Gusto Canada ULC Pay Statements	55-60
Comparable Compensation from the Central Bank of Brazil	61-66

Exhibit B.V. Membership in professional association(s)

Association for Computing Machinery (ACM) Membership Certificate	67-91

Exhibit B.VI. Recognition for achievements and significant contributions to the industry or field by peers, government entities, or professional or business organizations

Recommendation Letter Mr. Jeremy Heiler, Engineering Manager, Business Compliance Engineering, Gusto	92-95
Recommendation Letter Mr. Reinaldo Borges de Freitas, Chief Technology Officer, Soluti Digital	96-103
Recommendation Letter Mr. Sean Michael Fahey, Senior Engineering Manager, Top Hat	104-107
Recommendation Letter Mr. Gord Currie, former Senior Software Engineering Manager, Axon Public Safety	108-111
Recommendation Letter Mr. Dex Getson, Software Development Manager, Bold Commerce	112-115
Recommendation Letter Ms. Renee Fisher, Vice President of Engineering, Coconut Software	116-125
Recommendation Letter Mr. Adrian Gazzoli, Group Product Manager, Top Hat	126-130

Speaker Certificate – “Distance Learning Through Videoconferencing in Moodle,” 5th Latin American Free Software Conference, Latinoware 2008	131-133
Speaker Certificate – “Developing Institutional Systems with Zend Framework and jQuery,” 6th Latin American Free Software Conference, Latinoware 2009	134-136
Speaker Certificate – “Dependency Management with Composer,” Latin American Free Software Installation Festival (FLISOL), 2013	137-139
Speaker Certificate – CPD Edition 2020, Campus Party Brazil	140-142

Exhibit C.I – First Prong – Substantial Merit and National Importance

Business Plan – Vertex Digital Systems LLC	143-210
Research and Government Initiatives Supporting the Business	211-274

Exhibit C.II – Second Prong – Well-Positioned to Advance the Proposed Endeavor

All Documents Included in Exhibit B	275

Exhibit C.II – Second Prong – Financial Feasibility

CIBC Savings Account Statement, March 2026	276-277
IA Financial Group TFSA Investment Statement, April 2026 Currency Conversion from the Central Bank of Brazil	278

Exhibit D - Personal Documents

Birth Certificate and Corresponding Translation	279-281
Passport Biographic Page	282-283
Marriage Certificate and Corresponding Translation	284-286
Derivatives’ Birth Certificates and Corresponding Translations	287-299

Exhibit A

GUILHERME PEREIRA DA SILVA ALVES

Staff Software Engineer | AI Solutions | Cloud Integration | Platform Engineering

Calgary, Canada • guilhermepsa@gmail.com • +1 (204) 333-3532 • linkedin.com/in/guipsa • github.com/gpsa

SUMMARY

Staff software engineer with 15+ years across backend, cloud infrastructure, and, most recently, AI-powered products. I work at the altitude where system design, platform migrations, and cross-team decisions meet delivery — currently leading the technical integration of an acquired compliance platform into a larger payroll company. My strongest work tends to sit where infrastructure, AI, and organizational complexity overlap: re-platforming production systems, standing up observability and security foundations, and translating between teams that need to ship one product together.

EXPERIENCE

Staff Software Engineer — Gusto (Business Compliance) *Remote, Canada • Apr 2026 – Present*

Joined Gusto as a staff engineer through its acquisition of Mosey in April 2026, and took technical lead on folding Mosey's compliance platform into Gusto. I owned the infrastructure workstream end-to-end for the first release — the backend services, internal admin tooling, and customer-facing workflows — and delivered it on the committed timeline. The core of the work was moving the acquired product off its original container setup onto Gusto's managed Kubernetes environment: modernizing deployments and scheduled workloads, introducing demand-based autoscaling, and retiring the legacy stack.

Alongside the migration, I built the integration layer between the two platforms — unifying authentication, secrets management, and inbound document and mail routing so that acquired and net-new customers could be served through a single system — and consolidated the product's AI capabilities onto Gusto's managed AI platform, which continues to power automated summarization and classification of government-issued compliance notices. I moved observability onto the company's standard monitoring stack with distributed tracing across services and jobs, giving the team production visibility from day one. Much of the role is cross-functional: I act as the integration point across infrastructure, data, security, and observability teams and the acquired engineering group, sequencing the migration and representing the product in cross-team planning while tightening the security posture of the merged environment.

Senior Software Engineer — Mosey (acquired by Gusto; via Deel EOR) *Remote, Canada • Mar 2024 – Apr 2026*

As an early engineer at Mosey — an AI-powered platform automating multi-state business compliance for U.S. companies — I built customer-facing compliance features and the cloud and automation foundations that ultimately made the company an acquisition target for Gusto. I shipped the Notices product end-to-end, engineering the AI features that turn dense, government-issued compliance notices into clear, accurate summaries for customers, and designed an AI agent that autonomously navigates government and agency portals to retrieve filings, obligations, and account data — scaling operations without adding analyst headcount.

On the platform side, I automated the full deployment pipeline to a 0% deployment failure rate, cut cloud infrastructure cost by roughly 23% through codebase, infrastructure-as-code, and cloud-configuration improvements, and improved backend processing performance about 10x on a FastAPI and SQLAlchemy stack by resolving query and data-fetching bottlenecks and parallelizing external retrieval. I worked across the full stack through a ReactJS frontend and helped uphold SOC-2 compliance via continuous-monitoring and third-party penetration-testing programs.

Senior Software Engineer — Top Hat (Monocle) *Remote, Canada • Mar 2021 – Jan 2024*

Helped evolve the backend microservice architecture behind dynamic question delivery and automated grading on a large-scale SaaS platform that combined a Django monolith with distributed services. I built the Question Bank MVP, a tagging microservice for efficient content discovery by instructors, and developed an AI question generator that used prompt engineering to create multiple-choice questions from textbook content. I reduced AWS infrastructure cost by around 20% through database tuning and architectural improvements, decreased grade-calculation defects by 30% via algorithm and data-model changes, and led the frontend modernization to TypeScript and React Query that improved rendering performance and perceived responsiveness by over 50%.

Mentor — Lighthouse Labs *Remote, Canada • Sep 2021 – May 2024*

Mentored roughly 20 students per month through paired programming and technical coaching in Node.js, Express, Ruby on Rails, PostgreSQL, and React, improving project completion rates by about 25% while fostering a collaborative, high-engagement learning environment.

Developer — Bold Commerce *Winnipeg, MB, Canada • Feb 2019 – Feb 2021*

Built high-impact e-commerce features for Shopify merchants, focused on Subscriptions and Checkout, and integrated payment providers including Stripe, Spreedly, and Braintree. I developed full-stack features in PHP (Laravel), Python, MySQL, and React/Redux, practiced TDD with unit and E2E testing (CodeceptJS, WebDriver), improved CI/CD pipelines and Docker images with the DevOps team, and led the major platform upgrade from PHP 5 to PHP 7.

DevOps / Cloud Engineer (Freelance) — Auvo Tecnologia *Remote • Jul 2020 – Sep 2021*

Implemented end-to-end CI/CD pipelines on Azure DevOps and automated AWS deployments across containerized workloads. I designed and deployed Kubernetes infrastructure on AWS (EKS) with a service mesh via Istio, automated TLS with Cert-Manager and Let's Encrypt, managed networking and security policy with Calico CNI, and automated external RDS backups using MyDumper and Kubernetes CronJobs.

Software Engineering Manager — Soluti *Goiânia, Brazil • Mar 2015 – Jan 2019*

Led cross-functional engineering initiatives from design through staging deployment using Agile and GitFlow. I delivered architectural improvements that cut customer environment provisioning from 30 days to 2, introduced Docker and Docker Compose development standards across the teams, built monitoring integrations with Zabbix, and administered GitLab and Redmine while resolving cross-team infrastructure conflicts.

Earlier roles: *Programmer, Indra (2013–2015); Web Developer, FUNAPE (2008–2013); PHP Instructor, Agrosol (2009). Full history available on request.*

TECHNICAL SKILLS

Languages: Python, PHP, Go (Golang), TypeScript, JavaScript, Ruby

AI & ML: Agentic Workflows, Autonomous Agents, Tool Calling, LLM Integration (Anthropic Claude, OpenAI, Gemini), RAG, Prompt Engineering

Cloud & DevOps: AWS (ECS, EKS, EC2, S3, RDS, Lambda), GCP, Azure, Docker, Kubernetes, Helm, Istio, KEDA, Terraform (IaC), CI/CD, GitHub Actions, Buildkite, GitLab CI

Backend & Web: FastAPI, SQLAlchemy, Django, Laravel, React, Vue.js, RESTful APIs, GraphQL, Microservices, Event-Driven Architecture

Data & Storage: PostgreSQL, MongoDB, DynamoDB, Redis, MS SQL Server, Oracle

Security & Observability: IAM, OWASP, SOC-2, Datadog (APM, Distributed Tracing), AWS CloudWatch

EDUCATION & CERTIFICATIONS

Post-graduation, Computer Networks & Security — Federal University of Goiás, 2011

Associate Degree, Network Communications — Federal Institute of Goiás, 2008

Zend Certified Engineer (PHP) — 2017

LANGUAGES

Portuguese (Native) • English (Advanced)

Exhibit B.I. Official academic record showing that you have a degree, diploma, certificate, or similar award from a college, university, school, or other institution of learning relating to your area of exceptional ability

FEDERATIVE REPUBLIC OF BRAZIL
MINISTRY OF EDUCATION
FEDERAL INSTITUTE OF EDUCATION, SCIENCE, AND TECHNOLOGY OF GOIÁS

LAW NO. 11,892, OF 12/29/2008
Recognized by MEC Ordinance No. 302, of 01/20/2004, published in the Federal Official Gazette on 01/22/2004
Extended by Ordinance No. 3850, of 11/23/2004, published in the Federal Official Gazette on 11/24/2004

The Acting President of the FEDERAL INSTITUTE OF EDUCATION, SCIENCE, AND TECHNOLOGY OF GOIÁS, in the exercise of his duties and in considering the completion of the Higher Education Technology Program in Communication Networks, in the 2nd semester of 2008, and the Conferral of Degree held on October 22, 2008, hereby confers the degree of TECHNOLOGIST IN COMMUNICATION NETWORKS upon

Guilherme Pereira da Silva Alves

Brazilian, born in Goiânia, State of Goiás, on January 8, 1987, holder of Identity Document No. 4173164 - DGPC-GO, and CPF No. 014.671.021-56, and grants him this diploma, with all the rights and privileges thereto appertaining.

Goiânia, February 19, 2010.

-----// signature //-----
José Sergio Sarmento Garcia
Acting President
Ordinance No. 364, 06/30/2009

-----// signature //-----
Edison de Almeida Manso
General Director - Goiânia Campus
Ordinance No. 129, 03/05/2009

-----// signature //-----
Guilherme Pereira da Silva Alves
Diploma holder

INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA GOIÁS

FEDERATIVE REPUBLIC OF BRAZIL
MINISTRY OF EDUCATION
SECRETARIAT OF PROFESSIONAL AND TECHNOLOGICAL EDUCATION
FEDERAL INSTITUTE OF EDUCATION, SCIENCE, AND TECHNOLOGY OF GOIÁS
LAW NO. 11,892, DE 12/29/2008

Diploma registered at the Federal Institute of Goiás under No. 355, Book 04-S, page 355.

Goiânia, February 19, 2010.

-----// signature //-----
ABIGAIL RODRIGUES SILVA
Coordinator of Academic and School Records
Ordinance No. 449 of 08/10/2009

FEDERAL UNIVERSITY OF GOIÁS

ACADEMIC RECORDS DIVISION

Diploma registered under No. 68,516 on February 26, 2010.
Process No. 23070.003283/2010-01, pursuant to §1 of Article 48 of Law No. 9,394, of 12/20/1996 (Law of Guidelines and Bases of National Education) - Federal Official Gazette of 12/23/1996.

Goiânia, February 26, 2010.

-----// signature //-----
Certified by: Lurdes Gonçalves Rodrigues
Head of the Academic Records Division
-----// signature //-----
Verified: Prof. Dr. Valquiria da Rocha Santos Veloso
Head of the Department of Academic Affairs

[university stamp]

MINISTRY OF EDUCATION
FEDERAL INSTITUTE OF EDUCATION, SCIENCE AND TECHNOLOGY OF GOIÁS

As of the effective date of Law No. 11,892, of December 29, 2008 (published in the Federal Official Gazette on 12/30/2008), the Federal Center for Technological Education of Goiás was transformed into the Federal Institute of Education, Science and Technology of Goiás.

000558

[Federal Institute Logo]

MINISTRY OF EDUCATION
SECRETARIAT OF PROFESSIONAL AND TECHNOLOGICAL EDUCATION

Federal Law No. 11,892, of December 29, 2008
Rua 75, No. 46 - Centro - Goiânia - GO

Academic Transcript

Enrollment No.: 20051A022016 **Name:** GUILHERME PEREIRA DA SILVA ALVES
Program: Higher Education Technology Program in Communication Networks
Recognition: Recognized by MEC Ordinance No. 302, of 01/20/2004, published in the Federal Official Gazette on 01/22/2004. Extended by Ordinance No. 3850, of 11/23/2004, published in the Federal Official Gazette on 11/24/2004 **Curriculum:** 45 - 2004/1 **System:** Year-Based **Frequency:** Semester-Based

PERSONAL INFORMATION

Nationality: Brazil **Place of Birth:** Goiânia - GO **Identity Document:** 4173164 **Issuing Authority:** DGPC/GO **Date:** 01/28/1998
Date of Birth: 01/08/1987 **Parents:** Antonio Alves da Silva and Vera Lucia Pereira da Silva Alves
Voter ID: 0492 3298 1031 **Electoral District:** 136 **Polling Station:** 232 **State:** GO **CPF:** 014.671.021-56 **Military Document:** 071013694246 **Category:** **Series:**

ADMISSION INFORMATION

Method: University Entrance Examination **Year / Semester:** 2005/1
Admission Process: Portuguese, English, Mathematics, Physics, Chemistry, Biology, History, Geography, and Essay

HIGH SCHOOL INFORMATION

Institution: EXPOVEST SCHOOL **Municipality:** Goiânia **State:** GO **Year of Completion:** 2004

DEGREE AWARDED

Degree Awarded: Technologist in Communication Networks

UNDERGRADUATE PROJECT INFORMATION

Advisor: DORY GONZAGA RODRIGUES **Grade:**
Presentation Date: 08/27/2008 **Defense Result:** Passed **Credits:** 0

ACADEMIC STATUS

Academic Status: Graduate **Program Completion:** 08/27/2008 **Conferral of Degree:** 10/22/2008 **Completion of Credits:** 06/30/2008
Diploma Details: Book: 4 Page: 355 Registration No.: 355 Issue Date: 02/19/2010
Undergraduate Thesis Title: VIDEO CONFERENCING IN DISTANCE EDUCATION USING MOODLE

COMPLEMENTARY ACTIVITIES

Academic Period	Type	Description	Planned Hours:	Completed Hours
		Totals:	0	0

INTERNSHIPS

Company	Start	End	Completed Hours	Status
COMPUTING RESOURCES CENTER – CERCOMP – UFG	12/30/2007	08/22/2008	400	Internship Completed
		Total:	400	

PROFESSIONAL PROFILE

The Technologist in Communication Networks will be qualified to:
01. Develop, plan, and manage Telecommunications systems projects;
02. Specify the equipment and materials required for the implementation of a specific system;
03. Coordinate the installation of such systems, as well as the related equipment;
04. Market telecommunications services, based on the requirements of clients and society in general;
05. Administer contracts for system implementation, acting as a liaison between technical and commercial sectors;
06. Specify technical solutions available on the market;
07. Provide consulting services in Communication Networks;
08. Provide technical support for Telecommunications systems in general;
09. Engage in research and teaching within their professional field.

Registered by: _____ **Verified by:** _____

Academic Semester	Term	Courses		CH	CR	Grade	Att.%	Status
		Code	Description					
2005/1	1	10935.0S	PORTUGUESE LANGUAGE COMMUNICATION AND WRITING	34	34	8.0	100	Passed
2005/1	1	10087.0.34S	INSTRUMENTAL ENGLISH	34	34	7.0	100	Passed
2005/1	1	10930.0S	ACADEMIC AND SCIENTIFIC WORK METHODOLOGY	34	34	6.1	100	Passed
2005/1	1	10942.0S	PROGRAMMING TECHNIQUES	68	68	7.7	100	Passed
2005/1	1	10934.0S	DC AND AC ELECTRICAL CIRCUIT THEORY	68	68	6.5	100	Passed
2005/1	1	10927.0S	LIMITS AND DERIVATIVES THEORY	68	68	6.0	100	Passed
2005/2	1	10931.0S	PROBABILITY AND STATISTICS	34	34	6.0	100	Passed
2005/2	1	10929.0S	MATRIX AND VECTOR THEORY	68	68	6.8	100	Passed

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MINISTRY OF EDUCATION
SECRETARIAT OF PROFESSIONAL AND TECHNOLOGICAL EDUCATION

Federal Law No. 11,892, of December 29, 2008
Rua 75, No. 46 - Centro - Goiânia - GO

2005/2	2	10940.0S	COMBINATIONAL AND SEQUENTIAL CIRCUITS	68	68	6.6	91	Passed
2005/2	2	10937.0S	COMPUTATIONAL TOOLS FOR TELECOMMUNICATIONS	100	100	7.7	86	Passed
2005/2	2	10936.0S	MATHEMATICAL METHODS	34	34	7.3	100	Passed
2005/2	2	10938.0S	SEMICONDUCTOR CIRCUIT THEORY	68	68	6.5	100	Passed
2005/2	2	10928.0S	INTEGRATION THEORY AND TECHNIQUES	68	68	8.0	100	Passed
2005/2	2	10933.0S	WAVE THEORY AND ELECTROSTATICS	68	68	8.3	91	Passed
2006/1	3	10939.0S	DEDICATED ELECTRONIC CIRCUITS	68	68	6.4	100	Passed
2006/1	3	10943.0S	DATA COMMUNICATION	68	68	8.7	100	Passed
2006/1	3	10944.0S	BUSINESS MANAGEMENT	34	34	8.6	94	Passed
2006/1	3	10941.0S	MICROCONTROLLERS	34	34	8.0	100	Passed
2006/1	3	11467.0S	NETWORK PRINCIPLES	34	34	7.1	88	Passed
2006/1	3	10932.0S	LINEAR SYSTEMS	68	68	6.3	100	Passed
2006/1	3	10945.0S	MODULATION TECHNIQUES	100	100	9.5	98	Passed
2007/1	4	10521.0S	COMPUTER ARCHITECTURE	68	68	8.0	88	Passed
2007/1	4	10950.0S	TELEPHONE SWITCHING	68	68	7.9	100	Passed
2007/1	4	10949.0S	PRINCIPLES OF TELECOMMUNICATION NETWORKS	68	68	8.0	82	Passed
2007/1	4	10951.0S	DIGITAL SIGNAL PROCESSING	68	68	7.7	88	Passed
2007/1	4	10946.0S	ELECTROMAGNETIC WAVE PROPAGATION AND ANTENNAS	68	68	7.7	97	Passed
2007/1	4	10952.0S	TCP/IP NETWORKS	68	68	7.5	100	Passed
2007/2	5	10954.0S	OPTICAL COMMUNICATIONS	34	34	9.4	100	Passed
2007/2	5	11470.0S	COMPUTER NETWORK AND USER MANAGEMENT	100	100	10.0	100	Passed
2007/2	5	10959.0S	MULTIPLEXING AND DIGITAL TRANSMISSION	68	68	8.0	94	Passed
2007/2	5	10960.0S	DESIGN OF ELECTRICAL AND LOGICAL INSTALLATIONS	68	68	9.0	100	Passed
2007/2	5	10956.0S	WIRELESS ACCESS NETWORKS	68	68	7.5	94	Passed
2007/2	5	11468.0S	OPERATING SYSTEMS	68	68	10.0	100	Passed
2008/1	6	10962.0S	DATABASE ADMINISTRATION	68	68	9.8	100	Passed
2008/1	6	11469.0S	COMPUTER NETWORK PLANNING AND ANALYSIS	68	68	9.2	100	Passed
2008/1	6	10957.0S	HIGH-SPEED NETWORKS	68	68	8.1	97	Passed
2008/1	6	10528.0S	INDUSTRIAL NETWORKS	68	68	7.7	100	Passed
2008/1	6	10963.0S	COMPUTER NETWORK SECURITY	68	68	8.3	100	Passed
2008/1	6	11471.0S	INTELLIGENT SYSTEMS	68	68	8.4	100	Passed

Legend:
CH = Workload CR = Credits Att. = Attendance

National Program Examination:

	Required CH	Internship CH	Thesis CH	Total CH
Planned:	2442	400	200	3042
Completed:	2442	400	200	3042

GPA: 7.8

Notes:

Participated in ENADE on 11/08/2009.

Goiânia - GO, April 27, 2010

-----// signature //-----
Director
Edison de Almeida Manso
General Director of the Goiania Campus-IFG
Ordinance No. 129/2009

-----// signature //-----
Coordinator
Abigail Rodrigues Silva
Coordinator of Academic
and School Records
Ordinance No. 449/2009

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: March 18, 2026.**

REPÚBLICA FEDERATIVA DO BRASIL
MINISTÉRIO DA EDUCAÇÃO
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DE GOIÁS
LEI Nº 11.892, DE 29/12/2008
Reconhecido pela Portaria MEC nº 302 de 20/01/2004 publicada no D.O.U. de 22/01/2004
Prorrogado pela Portaria nº 3850 de 23/11/2004 publicada no D.O.U. de 24/11/2004

O Reitor em Exercício do INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DE GOIÁS, no uso de suas atribuições e tendo em vista a conclusão do Curso Superior de Tecnologia em Redes de Comunicação, no 2º Semestre de 2008 e termo de Colação de Grau em 22 de outubro de 2008, confere o título de TECNÓLOGO EM REDES DE COMUNICAÇÃO a

Guilherme Pereira da Silva Alves

de nacionalidade brasileira, natural de Goiânia - Estado de Goiás, nascido em 08 de janeiro de 1987, portador da Cédula de Identidade nº 4173164 - DGPC-GO, CPF nº 014.671.021-56 e outorgando-lhe o presente diploma, a fim de que possa gozar dos direitos e prerrogativas legais.

Goiânia, 19 de fevereiro de 2010.

José Sergio Sarmento Garcia
Reitor em Exercício
Portaria nº 364, de 30/06/2009

Edison de Almeida Manso
Diretor Geral - Campus Goiânia
Portaria nº 129 de 05/03/2009

Guilherme Pereira da Silva Alves
Titular do Diploma

INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA GOIÁS

INSTITUTO FEDERAL
GOIÁS

REPÚBLICA FEDERATIVA DO BRASIL
MINISTÉRIO DA EDUCAÇÃO
SECRETARIA DE EDUCAÇÃO PROFISSIONAL E TECNOLÓGICA
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DE GOIÁS
LEI Nº 11.892, DE 29/12/2008

Diploma Registrado no Instituto Federal de Goiás, sob o nº 355, do livro 04-S, folha 355.

Goiânia, 19 de fevereiro de 2010.

ABIGAIL RODRIGUES SILVA
Coordenadora de Registros Acadêmicos e Escolares
Portaria nº 449 de 10/08/2009

MINISTÉRIO DA EDUCAÇÃO
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DE GOIÁS

A partir da vigência da Lei nº 11.892, de 29 de dezembro de 2008 (publicada no D.O.U. de 30/12/2008), o Centro Federal de Educação Tecnológica de Goiás foi transformado em instituto Federal de Educação, Ciência e Tecnologia de Goiás.

MEC

UNIVERSIDADE FEDERAL DE GOIÁS
DIVISÃO DE REGISTRO ACADÊMICO

Diploma Registrado sob o nº. 68516, em 26 de fevereiro de 2010.
Processo nº.23070.003283/2010-01, nos termos do § 1º do Artigo 48 da Lei nº 9.394 de 20/12/1996. (Lei de Diretrizes e Bases da Educação Nacional) - D.O.U. 23/12/1996.

Goiânia, 26 de fevereiro de 2010.

Confere: Lurdes Gonçalves Rodrigues
Diretor(a) da Divisão de Registro Acadêmico

Visto: Profª. Drª. Valquiria da Rocha Santos Veloso
Diretor(a) do Departamento de Assuntos Acadêmicos

UNIVERSIDADE FEDERAL DE GOIÁS
DIVISÃO DE REGISTRO ACADÊMICO -DAA-
GOIÂNIA - GO

000558

INSTITUTO FEDERAL DE
EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
GOIÁS

Lei Federal nº 11.892, de 29 de dezembro de 2008
Rua 75, nº 46 – Centro – Goiânia - GO

Histórico Escolar

Matrícula: 20051A022016 **Nome:** GUILHERME PEREIRA DA SILVA ALVES

Curso: Superior de Tecnologia em Redes de Comunicação

Reconhecimento: Portaria MEC nº 302 de 20/01/04, publicada no D.O.U. em 22/01/04. Prorrogado pela Portaria nº 3850 de 23/11/04, publicada no D.O.U. em 24/11/04. **Matriz:** 45 - 2004/1 **Regime:** Seriado **Periodicidade:** Semestral

DADOS PESSOAIS

Nacionalidade: Brasil **Naturalidade:** Goiânia - GO **Identidade:** 4173164 **Orgão Expedidor:** DGPC/GO **Data:** 28/01/1998

Data de Nasc.: 08/01/1987 **Filiação:** Antonio Alves da Silva e Vera Lucia Pereira da Silva Alves

Tít. Eleitor: 0492 3298 1031 **Zona:** 136 **Seção:** 232 **UF:** GO **CPF:** 014.671.021-56 **Doc. Militar:** 071013694246 **Categoria:** **Série:**

DADOS DO INGRESSO

Forma: Vestibular **Ano/Período:** 2005/1

Processo Seletivo: Português, Inglês, Matemática, Física, Química, Biologia, História, Geografia e Redação.

DADOS DO ENSINO MÉDIO

Instituição: COLÉGIO EXPOVEST **Município:** Goiânia **UF:** GO **Conclusão:** 2004

TÍTULO CONFERIDO

Título Conferido: Tecnólogo em Redes de Comunicação

DADOS DO TCC (TRABALHO DE CONCLUSÃO DE CURSO)

Professor Orientador(a): DORY GONZAGA RODRIGUES **Conceito:**

Data da Apresentação: 27/08/2008 **Resultado da Defesa:** Aprovado **Créditos:** 0

SITUAÇÃO ACADÊMICA

Situação Acadêmica: Egresso **Conclusão do Curso:** 27/08/2008 **Colação Grau:** 22/10/2008 **Conclusão de Creditos:** 30/06/2008

Dados Diploma: Livro: 4 Folha: 355 Registro Nº: 355 Data de Expedição: 19/02/2010

Título do TCC (Trabalho de Conclusão de Curso) VÍDEO CONFERÊNCIA NA EDUCAÇÃO À DISTÂNCIA UTILIZANDO MOODLE.

ATIVIDADES COMPLEMENTARES

Per. Letivo	Tipo	Descrição	CH. Prevista	CH. Cumprida
		Totais:	0	0

ESTÁGIOS

Empresa	Início	Fim	CH. Cumprida	Situação
CENTRO DE RECURSOS COMPUTACIONAIS - CERCOMP - UFG	30/12/2007	22/08/2008	400	Estágio Concluído
		Total:	400	

PERFIL PROFISSIONAL

O Tecnólogo em Redes de Comunicação estará apto a:

01. Desenvolver, planejar e gerenciar projetos de sistemas de Telecomunicações;
02. Especificar equipamentos e materiais necessários na implantação de um sistema específico;
03. Coordenar a instalação dos referidos sistemas, bem como dos equipamentos envolvidos;
04. Comercializar serviços de Telecomunicações, com base nas exigências dos clientes e da sociedade em geral;
05. Administrar contratos para a implantação de sistemas, agindo como elemento de ligação entre os setores técnico e comercial;
06. Especificar soluções técnicas disponíveis no mercado;
07. Prestar serviços de consultoria em Redes de Comunicação;
08. Prestar assistência técnica em sistemas de Telecomunicações de maneira geral;
09. Dedicar-se à pesquisa e ao ensino dentro de sua área de atuação profissional.

Registrado por: _____ Visto por: _____

Período Letivo	PER.	Componentes Curriculares		CH	CR	Nota	Freq.%	Situação
		Código	Descrição					
2005/1	1	10935.0S	COMUNICAÇÃO E REDAÇÃO EM LÍNGUA PORTUGUESA	34	34	8,0	100	Aprovado
2005/1	1	10087.0.34S	INGLÊS INSTRUMENTAL	34	34	7,0	100	Aprovado
2005/1	1	10930.0S	METODOLOGIA DO TRABALHO ACADÊMICO E CIENTÍFICO	34	34	6,1	100	Aprovado
2005/1	1	10942.0S	TÉCNICAS DE PROGRAMAÇÃO	68	68	7,7	100	Aprovado
2005/1	1	10934.0S	TEORIA DE CIRCUITOS ELÉTRICOS DE CC E CA	68	68	6,5	100	Aprovado
2005/1	1	10927.0S	TEORIA DE LIMITES E DERIVADAS	68	68	6,0	100	Aprovado
2005/2	1	10931.0S	PROBABILIDADE E ESTATÍSTICA	34	34	6,0	100	Aprovado
2005/2	1	10929.0S	TEORIA MATRICIAL E VETORIAL	68	68	6,8	100	Aprovado



INSTITUTO FEDERAL DE
EDUCAÇÃO, CIÊNCIA E TECNOLOGIA
GOIÁS

Lei Federal nº 11.892, de 29 de dezembro de 2008
Rua 75, nº 46 - Centro - Goiânia - GO

2005/2	2	10940.0S	CIRCUITOS COMBINACIONAIS E SEQUENCIAIS	68	68	6,4	91	Aprovado
2005/2	2	10937.0S	FERRAMENTAS COMPUTACIONAIS PARA TELECOMUNICAÇÕES	100	100	7,7	86	Aprovado
2005/2	2	10936.0S	MÉTODOS MATEMÁTICOS	34	34	7,3	100	Aprovado
2005/2	2	10938.0S	TEORIA DE CIRCUITOS SEMICONDUTORES	68	68	6,5	100	Aprovado
2005/2	2	10928.0S	TEORIA E TÉCNICAS DE INTEGRAÇÃO	68	68	8,0	100	Aprovado
2005/2	2	10933.0S	TEORIA ONDULATÓRIA E ELETROSTÁTICA	68	68	8,3	91	Aprovado
2006/1	3	10939.0S	CIRCUITOS ELETRÔNICOS DEDICADOS	68	68	6,4	100	Aprovado
2006/1	3	10943.0S	COMUNICAÇÃO DE DADOS	68	68	8,7	100	Aprovado
2006/1	3	10944.0S	GESTÃO EMPRESARIAL	34	34	8,6	94	Aprovado
2006/1	3	10941.0S	MICROCONTROLADORES	34	34	8,0	100	Aprovado
2006/1	3	11467.0S	PRINCÍPIOS DE REDE	34	34	7,1	88	Aprovado
2006/1	3	10932.0S	SISTEMAS LINEARES	68	68	6,3	100	Aprovado
2006/1	3	10945.0S	TÉCNICAS DE MODULAÇÃO	100	100	9,5	98	Aprovado
2007/1	4	10521.0S	ARQUITETURA DE COMPUTADORES	68	68	8,0	88	Aprovado
2007/1	4	10950.0S	COMUTAÇÃO TELEFÔNICA	68	68	7,9	100	Aprovado
2007/1	4	10949.0S	PRINCÍPIOS DE REDES DE TELECOMUNICAÇÕES	68	68	8,0	82	Aprovado
2007/1	4	10951.0S	PROCESSAMENTO DIGITAL DE SINAIS	68	68	7,7	88	Aprovado
2007/1	4	10946.0S	PROPAGAÇÃO DE ONDAS ELETROMAGNÉTICAS E ANTENAS	68	68	7,7	97	Aprovado
2007/1	4	10952.0S	REDES TCP/IP	68	68	7,5	100	Aprovado
2007/2	5	10954.0S	COMUNICAÇÕES ÓPTICAS	34	34	9,4	100	Aprovado
2007/2	5	11470.0S	GERENCIAMENTO DE REDES DE COMPUTADORES E USUÁRIOS	100	100	10,0	100	Aprovado
2007/2	5	10959.0S	MULTIPLEXAÇÃO E TRANSMISSÃO DIGITAL	68	68	8,0	94	Aprovado
2007/2	5	10960.0S	PROJETO DE INSTALAÇÕES ELÉTRICAS E LÓGICAS	68	68	9,0	100	Aprovado
2007/2	5	10958.0S	REDES DE ACESSO SEM FIO	68	68	7,5	94	Aprovado
2007/2	5	11468.0S	SISTEMAS OPERACIONAIS	68	68	10,0	100	Aprovado
2008/1	6	10962.0S	ADMINISTRAÇÃO DE BANCOS DE DADOS	68	68	9,8	100	Aprovado
2008/1	6	11469.0S	PLANEJAMENTO E ANÁLISE DE REDES DE COMPUTADORES	68	68	9,2	100	Aprovado
2008/1	6	10957.0S	REDES DE ALTA VELOCIDADE	68	68	8,1	97	Aprovado
2008/1	6	10528.0S	REDES INDUSTRIAIS	68	68	7,7	100	Aprovado
2008/1	6	10963.0S	SEGURANÇA DE REDES DE COMPUTADORES	68	68	8,3	100	Aprovado
2008/1	6	11471.0S	SISTEMAS INTELIGENTES	68	68	8,4	100	Aprovado

Legenda:
CH = Carga Horária CR = Créditos

Exame Nacional de Cursos:

	CH Obrigatória	CH Estágio	CH Projeto Final	CH Total
Prevista:	2442	400	200	3042
Cumprida:	2442	400	200	3042

Coef. Rendimento: 7,8

Observações:
Participou do ENADE em 08/11/2009.

Goiânia - GO, 27 de Abril de 2010

Diretor(a)
Edison de Almeida Manso
Diretor-Geral do Campus Goiânia-IFG
Portaria Nº 129/2009

Coordenador(a)
Abigail Rodrigues Silva
Coordenadora de Registros Acadêmicos e Escolares
Port. Nº 449/2009

FEDERATIVE REPUBLIC OF BRAZIL
MINISTRY OF EDUCATION

FEDERAL UNIVERSITY OF GOIÁS

VICE-PRESIDENT'S OFFICE FOR RESEARCH AND GRADUATE STUDIES
Institute of Informatics

Resolutions: CNE/CES No. 01, of 06/08/2007; CEPEC No. 742, of 07/05/2005; CEPEC No. 846, of 09/04/2007

We hereby certify that **Guilherme Pereira da Silva Alves** completed the Specialization Program in **Computer Networks and Systems Security**, held by the Institute of Informatics at the Federal University of Goiás, from March 2, 2009 to March 1, 2011.

Goiânia, November 14, 2012.

-----// signature //-----
Prof. Divina das Dôres de Paula Cardoso, Ph.D.
Vice-President for Research and Graduate Studies

-----// signature //-----
Prof. Auri Marcelo Rizzo Vincenzi, Ph.D.
Head of the Department

Guilherme Pereira da Silva Alves
Graduate

MINISTRY OF EDUCATION
FEDERAL UNIVERSITY OF GOIÁS
INSTITUTE OF INFORMATICS

Specialization Program in Computer Networks and Systems Security

Name: Guilherme Pereira da Silva Alves						**CPF: 014.671.021-56**			**Date of Birth: 01/08/1987**
Courses	Legend (Status): AP: Passed AD: Credit Transfer	RM: Failed due to Grades RF: Failed due to Absences	**Workload (hours)** Pr.	Th.	Total	**Instructor in charge**	**Grade**	**Att.**	**Status**
Administration of Intranet/Internet Services with Emphasis on Security			16	16	32	Prof. Aníbal Santos Jukemura, Ms. Prof. Vagner José do Sacramento Rodrigues, Ph.D.	8.31	88%	AP
TCP/IP Architecture			8	28	36	Prof. Kleber Vieira Cardoso, Ph.D.	8.90	100%	AP
Systems Auditing and Forensic Security			10	6	16	Prof. Alexandre Moreira Vaz, B.Sc.	8.00	100%	AP
Cryptography and Protocols for Secure Communication			4	16	20	Prof. Ricardo Couto Antunes da Rocha, Ph.D.	7.50	100%	AP
Fundamentals of Computer Networks			4	8	12	Prof. Sérgio Teixeira de Carvalho, Ms.	8.90	100%	AP
Network Management			8	8	16	Prof. Augusto José Venâncio Neto, Ph.D.	9.50	100%	AP
Security Management			0	12	12	Prof. Sérgio Teixeira de Carvalho, Ms.	8.20	100%	AP
Network Security Laboratory			4	12	16	Prof. Marcelo Akira Inuzuka, Ms.	7.60	100%	AP
Middleware for Distributed Processing			4	12	16	Prof. Fábio Moreira Costa, Ph.D.	8.50	100%	AP
Design and Implementation of Corporate Networks			0	24	24	Prof. Anibal Santos Jukemura, Ms.	8.50	100%	AP
High-Speed Networks			0	16	16	Prof. Kleber Vieira Cardoso, Ph.D.	9.70	88%	AP
Computer Networks – Advanced Topics			8	20	28	Prof. Ricardo Couto Antunes da Rocha, Ph.D.	9.50	86%	AP
Local Area Networks and Access Technologies			4	20	24	Prof. Augusto José Venâncio Neto, Ph.D.	8.50	100%	AP
Wireless Networks			4	12	16	Prof. Fábio Moreira Costa, Ph.D.	7.80	100%	AP
Routing – Theory and Practice			4	12	16	Prof. William Divino Ferreira, Ms.	10.00	88%	AP
Systems Security			0	24	24	Prof. Vagner José do Sacramento Rodrigues, Ph.D.	9.65	100%	AP
Intrusion Detection Systems			10	6	16	Prof. William Divino Ferreira, Ms.	7.50	88%	AP
Fault Tolerance and Performance Management			4	16	20	Prof. Alaor José da Silva Júnior, Ms.	7.50	100%	AP

We hereby declare that all provisions set forth in the applicable resolutions have been complied with.

Total course load: 360 hours. Period: March 2, 2009 to March 1, 2011.

Undergraduate Thesis title: Information Security Management System Model for small and medium-sized enterprises, based on Standard NBR ISO/IEC 27002

Date of approval: August 22, 2011. Evaluation: Passed

Advisor: Prof. Alaor Jose da Silva Júnior, Ms.

-----// signature //-----

Prof. Fábio Moreira Costa, Ph.D.

Program Coordinator

MEC **FEDERAL UNIVERSITY OF GOIÁS**

Certificate registered under No. 7481 Registration date: 11/14/2012

Issued on November 14, 2012.

-----// signature //-----

Certified by: José Vitorino Vieira

Head of Diploma Issuance and Registration

-----// signature //-----

VERIFIED: Prof. Valquiria da Rocha Santos Veloso, Ph.D.

Director of the Academic Management Center

056625

Translator's Notes: Th. – Theoretical; Pr. – Practical; Att. – Attendance.

I, Raphael Michels Fantinato de Moura, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.

Raphael Michels Fantinato de Moura. **Date: March 17, 2026.**

REPÚBLICA FEDERATIVA DO BRASIL
MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE GOIÁS

PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO

Instituto de Informática

Resoluções: CNE/CES nº 01, de 08/06/2007; CEPEC nº 742, de 05/07/2005; CEPEC nº 846, de 04/09/2007

Certificamos que **Guilherme Pereira da Silva Alves** concluiu o curso de Especialização em **Redes de Computadores e Segurança de Sistemas**, ministrado pelo Instituto de Informática da Universidade Federal de Goiás, durante o período de 02 de março de 2009 a 01 de março de 2011.

Goiânia, 14 de novembro de 2012.

Profª. Drª. Divina das Dôres de Paula Cardoso

Pró-Reitora de Pesquisa e Pós-Graduação

Prof. Dr Auri Marcelo Rizzo Vincenzi

Diretor de Unidade

Guilherme Pereira da Silva Alves

Concluinte

UFG

MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE GOIÁS
INSTITUTO DE INFORMÁTICA

Curso de Especialização em Redes de Computadores e Segurança de Sistemas

Nome: Guilherme Pereira da Silva Alves **CPF:** 014.671.021-56 **Data de Nascimento:** 08/01/1987

Legenda situação: AP: Aprovado AD: Aproveitamento de disciplina RM: Reprovado por média RF: Reprovado por falta

Disciplinas	Carga horária (h) Prática	Teórica	Total	Docente responsável	Nota	Freq.	Situação.
Administração de Serviços de Intranet / Internet Com Ênfase em Segurança	16	16	32	Prof. Ms. Aníbal Santos Jukemura Prof. Dr Vagner José do Sacramento Rodrigues	8,31	88%	AP
Arquitetura T C P / I P	8	28	36	Prof. Dr Kleber Vieira Cardoso	8,90	100%	AP
Auditoria de Sistemas e Segurança Forense	10	6	16	Prof. Gr. Alexandre Moreira Vaz	8,00	100%	AP
Criptografia e Protocolos para Comunicação Segura	4	16	20	Prof. Dr Ricardo Couto Antunes da Rocha	7,50	100%	AP
Fundamentos de Redes de Computadores	4	8	12	Prof. Ms. Sérgio Teixeira de Carvalho	8,90	100%	AP
Gerenciamento de Redes	8	8	16	Prof. Dr Augusto José Venâncio Neto	9,50	100%	AP
Gestão de Segurança	0	12	12	Prof. Ms. Sérgio Teixeira de Carvalho	8,20	100%	AP
Laboratório de Segurança de Redes	4	12	16	Prof. Ms. Marcelo Akira Inuzuka	7,60	100%	AP
Middleware para Processamento Distribuído	4	12	16	Prof. Dr Fábio Moreira Costa	8,50	100%	AP
Projeto e Implantação de Redes Corporativas	0	24	24	Prof. Ms. Aníbal Santos Jukemura	8,50	100%	AP
Redes de Alta Velocidade	0	16	16	Prof. Dr Kleber Vieira Cardoso	9,70	88%	AP
Redes de Computadores - Tópicos Avançados	8	20	28	Prof. Dr Ricardo Couto Antunes da Rocha	9,50	86%	AP
Redes Locais e Tecnologias de Acesso	4	20	24	Prof. Dr Augusto José Venâncio Neto	8,50	100%	AP
Redes Sem Fio	4	12	16	Prof. Dr Fábio Moreira Costa	7,80	100%	AP
Roteamento - Teoria e Prática	4	12	16	Prof. Ms. William Divino Ferreira	10,00	88%	AP
Segurança de Sistemas	0	24	24	Prof. Dr Vagner José do Sacramento Rodrigues	9,65	100%	AP
Sistemas de Detecção de Intrusão	10	6	16	Prof. Ms. William Divino Ferreira	7,50	88%	AP
Tolerância a Falhas e Gerenciamento de Desempenho	4	16	20	Prof. Ms. Alaor José da Silva Júnior	7,50	100%	AP

Declaramos que foram cumpridas todas as disposições previstas pelas resoluções em vigor.

Carga horária total: 360 horas. Período: 02 de março de 2009 a 01 de março de 2011.

Título da monografia: Modelo de Sistema de Gestão de Segurança da Informação para empresas de pequeno e médio porte, baseado na Norma NBR ISO/IEC 27002

Data de aprovação: 22 de agosto de 2011. Avaliação : Aprovado

Orientador: Prof. Ms. Alaor José da Silva Júnior

Prof. Dr Fábio Moreira Costa
Coordenador de Curso

MEC **UNIVERSIDADE FEDERAL DE GOIÁS**

Certificado registrado sob nº. 7481 Data do registro: 14/11/2012

Expedido em 14 de novembro de 2012.

José Vitorino Vieira
Coordenador de Expedição e Registro de Diplomas

Confere:

VISTO: Profª. Drª Valquiria da Rocha Santos Veloso
Diretora do Centro de Gestão Acadêmica

056625

Carnegie Evaluations LLC
315 East High Street, Bound Brook, New Jersey, 08805
Email: info@carnegieevaluations.com
Website: www.carnegieevaluations.com
Phone: (848)300-0099
Fax: (848) 300-5199

EVALUATION OF ACADEMICS

Carnegie Evaluations LLC, who specializes in the evaluation of foreign educational credentials, has prepared the following academic credential evaluation.

April 28, 2026

Name: **Mr. Guilherme PEREIRA DA SILVA ALVES**

Following is a description of Mr. Pereira da Silva Alves's foreign degrees:

Institution:	*Instituto Federal de Educacao, Ciencia e Tecnologia de Goias*
Degree:	*Titulo de Tecnologo em Redes de Comunicacao*
Date of Award:	October 2008
Years of Study:	Three
Country:	Brazil

Institution:	*Universidade Federal de Goias*
Program:	*Curso de Especializacao em Redes de Computadores e Seguranca de Sistemas*
Date of Completion:	March 2011
Country:	Brazil

Academic Equivalency in the United States

ASSOCIATE OF SCIENCE IN COMMUNICATIONS

GRADUATE CERTIFICATE IN INFORMATION SYSTEMS

Carnegie Evaluations LLC, offers this evaluation, after reviewing copies of the original diploma certificates and transcripts provided. This evaluation is advisory in nature and is based on the assumption that the submitted documents are accurate. There are no apparent grounds to disbelieve the authenticity and accuracy of the documentation presented on behalf of Mr. Guilherme Pereira da Silva Alves. In addition, this evaluation is based upon standard scholarly and professional sources as referenced at the end of this document. Carnegie Evaluations LLC, is not responsible for how this evaluation report will be used and is not responsible for damages resulting from such use of this report.

DISCUSSION OF MR. PEREIRA DA SILVA ALVES'S ACADEMICS

This credential evaluation is provided upon review of the degree certificates and transcripts awarded to Mr. Guilherme Pereira da Silva Alves during the course of his academic career. An analysis of Mr. Pereira da Silva Alves's foreign educational courses for the *titulo de Tecnologo em Redes de Comunicacao* (translated as degree of Technologist in Communication Networks) from *Instituto Federal de Educacao, Ciencia e Tecnologia de Goias* (translated as Federal Institute of Education, Science, and Technology of Goias), and a *curso de especializacao em Redes de Computadores e Seguranca de Sistemas* (translated as specialization program in Computer Networks and Systems Security) from *Universidade Federal de Goias* (translated as Federal University of Goias) forms the basis for the following evaluation.

Mr. Pereira da Silva Alves graduated with a degree of Technologist in Communication Networks from the Federal Institute of Education, Science, and Technology of Goias in October 2008. Federal Institute of Education, Science, and Technology of Goias is an accredited institution of higher education in Goiania, Brazil. Admission to this program requires graduation from the US equivalent of high school and competitive entrance examinations. Mr. Pereira da Silva Alves satisfactorily completed the academic course requirements required for the degree of Technologist in Communication Networks. He majored in Communication Networks and was awarded a degree of Technologist from the institute.

This is a three-year undergraduate program which is substantially similar to the required coursework leading to completion of three years of bachelor-level studies from a regionally accredited University in the United States. The academic criterion maintained by the Federal Institute of Education, Science, and Technology of Goias is significantly similar to those parameters upheld by any other accredited colleges and universities in the United States.

The degree of Technologist in Communication Networks curriculum includes advanced bachelor-level coursework and examinations in Principles of Telecommunication Networks, DC and AC Electrical Circuit Theory, Combinational and Sequential Circuits, Computational Tools for Telecommunications, Semiconductor Circuit Theory, Wave Theory and Electrostatics, Dedicated Electronic Circuits, Data Communication, Microcontrollers, Network Principles, Linear Systems, Modulation Techniques, Computer Architecture, Telephone Switching, Digital Signal Processing, Electromagnetic Wave Propagation and Antennas, TCP/IP Networks, Optical Communications, Computer Network and User Management, Design of Electrical and Logical Installations, Operating Systems, Database Administration, Computer Network Planning and Analysis, High-Speed Networks, Industrial Networks, Computer Network Security, and other related subjects.

Thereafter, Mr. Pereira da Silva Alves completed a specialization program in Computer Networks and Systems Security from the Federal University of Goias in March 2011. Federal University of Goias is an accredited institution of higher education in Goiania, Brazil. Admission to this program requires graduation from bachelor-level studies and competitive entrance examinations. Mr. Pereira da Silva Alves satisfactorily completed the academic course requirements required for the specialization program in Computer Networks and Systems Security. He majored in Computer Networks and Systems Security and was awarded a diploma from the institute.

This is a specialized training program of study that allows students to advance their knowledge and skills in a more specific area. The academic criterion maintained by Federal University of Goias is significantly similar to those parameters upheld by any other accredited colleges and universities in the United States.

The specialization program in Computer Networks and Systems Security curriculum includes advanced graduate-level coursework and examinations in TCP/IP Architecture, Systems Auditing and Forensic Security, Cryptography and Protocols for Secure Communication, Fundamentals of Computer Networks, Network Management, Security Management, Middleware for Distributed Processing, Design and Implementation of Corporate Networks, High-Speed Networks, Local Area Networks and Access Technologies, Wireless Networks, Systems Security, Fault Tolerance and Performance Management, and other related subjects.

Upon reviewing Mr. Pereira da Silva Alves's academic history, it becomes apparent that Mr. Pereira da Silva Alves has satisfied the coursework requirements, which are substantially similar and equivalent to those required for the completion of an Associate degree and a Graduate Certificate at an accredited institution of higher education in the United States.

SUMMARY

On the basis of the academic reputations of the Federal Institute of Education, Science, and Technology of Goias, and Federal University of Goias, the nature and duration of the academic course work, and the grades attained in the courses, it is the judgment of Carnegie Evaluations LLC that Mr. Pereira da Silva Alves has attained the equivalent of an Associate of Science degree in Communications and a Graduate Certificate in Information Systems from an accredited institution of higher education in the United States.

Carnegie Evaluations LLC represents this evaluation report to be an accurate and correct evaluation to the best of its knowledge and belief, pursuant to requirements of the Citizenship and Immigration Services of the United States Department of Homeland Security. Carnegie Evaluations LLC does not represent that the documentation submitted to it by anyone for evaluation meets the evidentiary standards of any state or federal agency or any court. This evaluation report, as are all such reports provided by Carnegie Evaluations LLC, is advisory for the customer who requested it.

The foregoing evaluation of Mr. Pereira da Silva Alves has been reviewed and approved by me, Dr. Zach G. Zacharia, on April 28, 2026.

Sincerely,



Zach G. Zacharia, Ph.D.
Director, Carnegie Evaluations LLC.
Associate Professor of Supply Chain Management
Director, Lehigh Center for Supply Chain Research
Lehigh University

Evaluation Resources:

1. World Higher Education Database. International Association of Universities' Worldwide Database of Higher Education Institutions, Systems and Credentials. www.whed.net.
2. AACRAO EDGE. AACRAO Electronic Database for Global Education. https://www.aacrao.org/edge
3. Central Intelligence Agency (CIA). The World Factbook. https://www.cia.gov/the-world-factbook/
4. ENIC-NARIC. European Network of Information Centres in the European Region, National Academic Recognition Information Centres in the European Union. www.enic-naric.net.

Bio: Professor Zach G. Zacharia

I am the Interim Department Chair, Decision and Technology Analytics (DATA) Department, an Associate Professor of Supply Chain Management, and Director of the Center for Supply Chain Research Lehigh in the College of Business and Economics, Lehigh University, where I teach Graduate and Undergraduate courses in Supply Chain Operations Management and Logistics and Transportation. In addition, I am also a visiting Professor at the Indian Institute of Technology (IIT) in New Delhi, India. I graduated with a B.S. in Mechanical Engineering from the University of Calgary, an MBA from the University of Alberta, and a Ph.D. in Logistics with a minor in Marketing from the University of Tennessee. My current research interests include Collaboration/Coopetition within the Supply Chain, Supplier Satisfaction, and the Physical Internet.

Before joining Academia, I worked at the University of Tennessee, Center for Transportation Research, for six years as an Associate Director. I also worked at the Department of Transportation in Alberta, Canada, for ten years as an Equipment Engineer. I am a principal in BZS Consulting, which primarily focuses on teaching Supply Chain Operations Management and evaluating collaboration and procurement strategies across firms in a supply chain.

I have developed significant international contacts and collaborations with many affiliate schools in several countries in Europe, Asia, and South America. I have evaluated numerous portfolios of international students from countries around the world and have performed in-depth assessments of how these foreign courses are equated to corresponding courses in the United States.

I have 29 refereed publications, including 2 articles in the Journal of Operations Management, 8 articles in the *Journal of Business Logistics,* and articles in *Decision Sciences*, the *Journal of Supply Chain Management, Industrial Marketing Management, International Journal of Production Research, International Journal of Production and Operations Management, International Journal of Logistics Management, Journal of Retailing, Journal of Business and Industrial Marketing, Marketing Management, Supply Chain Management Review, Journal of International Technology and Information Management*, *Journal of Vehicle Design* and *Wall Street Journal*. As a member of a Supply Chain Research Group at the University of Tennessee, I co-authored a book titled "*Supply Chain Management*" (Sage Publications, December 2000). I also contributed a chapter on logistics service providers and new product development in the book titled *Managing Innovation: The New Competitive Edge for Logistics Service Providers*, Stephan M. Wagner ed.**,** Kuehne Foundation Book Series (2007).

Among the awards that I have received is the DATA Department Service Award (2023), Staub Faculty Excellence Award (2013) for the College of Business, Lehigh University, Best Paper Finalist (2010) from the Journal of Operations Management, Best Paper Award (2007) from NARTS and Best Dissertation Proposal Award (2000) from University of Arkansas. As a member of a Supply Chain Research Group at the University of Tennessee, I coauthored a book titled Supply Chain Management (Sage Publications, December 2000).

A. Biographical Information

Zach G. Zacharia, Ph.D.
Interim Department Chair, Decision and Technology Analytics Department
Associate Professor Supply Chain Management
Director, Center for Supply Chain Management Lehigh
Supply Chain Management Program Director
Department of Management, College of Business Administration and Economics
Lehigh University, 621 Taylor Street, Bethlehem, PA, 18015
Office: (610) 758-4433, Fax: (610) 758-6941
zgz208@lehigh.edu

EDUCATION

1996 - 2001 **THE UNIVERSITY OF TENNESSEE** **Knoxville, TN**
Doctor of Philosophy in Business Administration

- Major: Logistics, Minor: Marketing
- Dissertation Title: An Analysis of the Effect of Logistics Involvement in Cross-functional Integrated New Product Development Projects (Advisor: Dr. John T. Mentzer)

1988 – 1993 **THE UNIVERSITY OF ALBERTA** **Edmonton, AB**
Master of Business Administration

1981 - 1985 **THE UNIVERSITY OF CALGARY** **Calgary, AB**
Bachelor of Science, Mechanical Engineering

1980 - 1981 **RED DEER COLLGE** **Red Deer, AB**
Bachelor of Science

1979 – 1980 **THE UNIVERSITY OF ALBERTA** **Edmonton, AB**
Bachelor of Science

WORK EXPERIENCE SUMMARY

2016 – Present, Director, Center for Supply Chain Research Lehigh
2013 – Present, Associate Professor – Lehigh University
2008 – 2013 Assistant Professor – Lehigh University
2001 – 2008 Assistant Professor - Texas Christian University
1999 – 2001 Associate Director – Transportation Center, University of Tennessee
1997 – 1999 Assistant Director - Transportation Center, University of Tennessee
1995 – 1997 Senior Research Associate – University of Tennessee
1989 – 1995 Research Engineer – R&D Branch, Alberta Transportation & Utilities
1985 – 1989 Equipment Engineer – Alberta Transportation & Utilities

CONSULTING PROJECTS, EXECUTIVE EDUCATION

2023 Ecofriendly Behavior on Personal Transportation, AFIT, Dalton
2020 Financial Flow in SC, DiCentral, Houston

2020	Expert Witness – Real Estate Company, Bethlehem
2020	Lehigh University, Executive Education, Bethlehem
2019	Lehigh University, Executive Education, Bethlehem
2019	SC Collaboration in Drop Ship, DiCentral, Houston
2018	Coopetition in the Defense Industry, AFIT, Dayton
2018	IIT New Delhi, Executive Education, Delhi, India
2017	Lehigh University, Executive Education, Bethlehem
2016	IIT Madras, Global Initiative of Academic Networks, Chennai, India
2015	Morrison Executive Education, Santo Domingo, Dominican Republic
2014	CSCMP Executive Seminar, Bogota, Columbia
2012	Supply Chain Management Simulation, WAM Systems, Philadelphia
2010	Supply Chain Management Overview, Universidad de Piura, Peru
2007	Procurement of Capability Guidelines, Lockheed Martin Aeronautics
2002	Truck Safety Recommendations, University of Tennessee

B. Publications and Creative Activities

EDITORIAL ROLES (6)

- Senior Associate Editor- *International Journal of Logistics Management (2018-current)*
- Senior Editor- *Journal of Business Logistics (2016- current)*
- Special Issue Editor-(Physical Internet) - *Journal of Business Logistics (2018-2020)*
- Special Issue Editor- (Inter-Disciplinary Research) *Journal of Business Logistics (2014-2015)*
- Editorial Board Member – *Journal of Operations Management*
- Editorial Board Member –*Transportation Journal*
- Editorial Board Member – *Journal of Supply Chain Management*

DISSERTATION COMMITTEE MEMBER (2)

- Michael Plasch - *Supply Chain Collaboration - Investigating Motives, Drivers And Success Factors* – Johannes Kepler University Linz, Austria, 2021
- Kimberly K. Whitehead – *It's A Matter Of Give And Take: Exploring The Role Of Knowledge Transfer Within Supply Chain Collaboration* - University of Texas at Arlington, USA, 2014

BOOK CHAPTERS (5)

- **Zacharia, Zach G**. "Is there a role for Logistics Service Providers in New Product Development?" *Managing Innovation: The New Competitive Edge for Logistics Service Providers*, Stephan M. Wagner ed., Kuehne Foundation Book Series. Ch 7, 2008.
- Mentzer, John T., William J. DeWitt, James S. Keebler, Soonhong Min, Nancy W. Nix, Carlo D. Smith, and **Zach G. Zacharia**, "What is Supply Chain Management" *Supply Chain Management*, Thousand Oaks, CA: Sage Publications, Ch.1, 2000.
- **Zacharia, Zach G**., "R&D and New Product Development in Supply Chain Management" *Supply Chain Management*, John T. Mentzer ed.**,** Thousand Oaks, CA: Sage Publications, Ch.6, 2000.
- **Zacharia, Zach G**., "The Evolution and Growth of Production in Supply Chain Management" *Supply Chain Management*, John T. Mentzer ed., Thousand Oaks, CA: Sage Publications, Ch.8, 2000.
- **Zacharia, Zach G**, "The Evolution and Growth of Information Systems in Supply Chain Management" *Supply Chain Management*, John T. Mentzer ed., Thousand Oaks, CA: Sage Publications, Ch.11, 2000.

REFEREED PUBLICATIONS (29)

29. Varun Jain, Usha Mohan, Zach G. Zacharia, Nada R. Sanders (2022) "Improving patient satisfaction and outpatient diagnostic center efficiency using novel online real-time scheduling" *Operations Research for Health Care,* 32, 1-17, 100338

28. Saif Mir, Misty Blessley, **Zach Zacharia**, John Aloysius (2022) "Mending Fences in the Buyer-Supplier Relationship: The Role of Justice in Relationship Restoration" *Journal of Supply Chain Management*. Vol. 58, No. 3, 23 – 46.

27. Dev, Navin; Ravi Shankar; **Zach Zacharia**, Sanjeev Swami, (2021) "Supply chain resilience for managing the ripple effect in Industry 4.0 for green product diffusion" *International Journal of Physical Distribution & Logistics Management* Vol. 51 No. 8, 897-930.

26. Ballot, Eric, Benoit Montreuil, **Zach G. Zacharia**, (2021) "Physical Internet: First Results and Next Challenges" *Journal of Business Logistics* Vol 42 No. 1, 1 – 7.

25. Treiblmaier, Horst, Kristijan Mirkovski, Paul B. Lowry, **Zach G. Zacharia**, (2020) "The Physical Internet as a New Supply Chain Paradigm: A Systematic

Literature Review and a Comprehensive Framework" *International Journal of Logistics Management* Vol. 31 No. 2, 239-287.

24. **Zach G. Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2019) "The Emerging Role of Coopetition Within Inter-Firm Relationships" *International Journal of Logistics Management* Vol. 30, No. 2, 414-437.

23. Soonhong Min, **Zach G. Zacharia**, Carlo D. Smith (2019) "Defining Supply Chain Management: In the Past, Present and Future" *Journal of Business Logistics* Vol. 40 No.1, 44-55.

22. Kimberly Whitehead, **Zach Zacharia**, Edmund Prater (2019) "Investigating the Role of Knowledge Transfer in Supply Chain Collaboration" *International Journal of Logistics Management"* Vol. 30, No. 1, 284-302.

21. Misty Blessly, Saif Mir, **Zach G. Zacharia**, John Aloysius (2018) "Breaching Relational Obligations In A Buyer-Supplier Relationship: Feelings Of Violation, Fairness Perceptions And Supplier Switching" *Industrial Marketing Management* Vol. 74, Oct, 215-226.

20. Faraz, Alireza, Nada R. Sanders, **Zach G. Zacharia**, Markus Gerschberger (2018) "Monitoring Type B Buyer-Supplier Relationships" *International Journal of Production Research* Vol. 56, No. 18, 6225-6239.

19. Whitehead, Kimberly, **Zach G. Zacharia**, Edmund Prater, (2016) "Absorptive Capacity Versus Distributive Capability: The Asymmetry of Knowledge Transfer" *International Journal of Operations and Production Management* Vol. 36, No 10, 1308-1332.

18. Nada R. Sanders, Brian R. Fugate, **Zach G. Zacharia**, (2016) "Interdisciplinary Research In SCM: Through the Lens of The Behavioral Theory of The Firm" *Journal of Business Logistics* Vol. 37, No 2, 107-112.

17. Nancy W. Nix, **Zach G. Zacharia,** (2014) "The Impact of Collaborative Engagement on Knowledge and Performance Gains in Episodic Collaborations" *International Journal of Logistics Management* Vol. 25, No 2, 245-269.

16. **Zach G. Zacharia,** Nada R. Sanders, Brian R. Fugate (2014) "The Evolving Role of Disciplines Within Supply Chain Management" *Journal of Supply Chain Management* Vol. 50, No 1, 73-88.

15. Nada R. Sanders, **Zach G. Zacharia**, Brian R. Fugate (2013) "The Interdisciplinary Future of Supply Chain Management Research" *Decision Sciences* Vol. 44, No. 3, 413-429.

14. Geoffrey T. Stewart, **Zach G. Zacharia,** Andrew B. Artis (2012) "Leveraging Relationship Orientation and its Impact on Relationship Outcomes" *Journal of Business and Industrial Marketing,* Vol. 27, No. 8, 644-658.

13. **Zach G. Zacharia,** Nancy W. Nix, Robert F. Lusch (2011) "Capabilities that Enhance Outcomes of an Episodic Supply Chain Collaboration" *Journal of Operations Management*, Vol. 29, No. 6, 591-603.

12. **Zach G. Zacharia,** Nada R. Sanders, Nancy W. Nix (2011) "The Emerging Role of the Third-Party Logistics Provider (3PL) as a Supply Chain Orchestrator" *Journal of Business Logistics*, Vol. 32, No. 1, 40-54.

11. Danny Lanier, Jr., William F. Wempe, **Zach G. Zacharia**, (2010) "Concentrated Supply Chain Membership and Financial Performance: Chain- and Firm-Level Perspectives" *Journal of Operations Management*, Vol.28, No.1, 1-16.

10. **Zach G. Zacharia**, Chad W. Autry, David S. Preston, Charles W. Lamb, (2009) "IT Alignment with Business Strategies in a Healthcare Organizations: An Empirical Analysis" *Journal of International Technology and Information Management*, Vol. 18, No. 3/4, 477-494.

9. **Zach G. Zacharia,** Nancy W. Nix and Robert F. Lusch, (2009) "An Analysis of Supply Chain Collaborations and Their Effect on Performance" *Journal of Business Logistics*, Vol. 30, No. 2, 101-123.

8. Chad W. Autry, **Zach G. Zacharia** and Charles W. Lamb, (2008) "A Logistics Strategy Taxonomy" *Journal of Business Logistics,* Vol. 29. No. 2, 53-74.

7. Nancy W. Nix, Robert F. Lusch, **Zach G. Zacharia**, and Wesley R. Bridges, (2008) "Competent Collaborations" *Marketing Management*, Vol. 17, No. 2, 18-24.

6. **Zach G. Zacharia** and John T. Mentzer (2007) "The Role of Logistics in New Product Development," *Journal of Business Logistics*, Vol. 28, No. 1, 83-110.

    a. Reprinted in:
    b. *Logistique and Management,* Vol. 16, No. 1, 35-53, (2008).

5. **Zach G. Zacharia** and John T. Mentzer (2004) "Logistics Salience In A Changing Environment," *Journal of Business Logistics*, Vol. 25, No. 1, 187-210.

    a. Reprinted in:
    b. *The ICFAI Journal of Supply Chain Management*, Vol. 3, No. 1, 53-72, (2006).

4. Mentzer, John T., William DeWitt, James S. Keebler, Soonhong Min, Nancy W. Nix, Carlo D. Smith, **Zach G. Zacharia** (2001) "Defining Supply Chain Management," *Journal of Business Logistics*, Vol. 22, No. 2, 1-25.

    c. Reprinted in:
    d. *Logistique and Management,* Vol. 9, No. 2, 3-19, (2001).

3. **Zacharia, Zach G**., John E. Tidwell and Stephen H. Richards (2001) "An Overview of Truck and Bus Safety:1999 Knoxville Symposium," *Journal of Vehicle Design*, Vol. 26, No. 4, 442-453.

2. Mentzer, John T., Min Soonhong and **Zach G. Zacharia** (2000) "The Nature of Interfirm Partnering in Supply Chain Management," *Journal of Retailing*, Winter, Vol. 76, Issue 4, 549-568.

1. **Zacharia, Zach G**. and Bart Jennings (1998) "The Use of Active Participation and Group Competition to Facilitate Training and Technology Transfer for Adult Learners," *Transportation Research Record,* No. 1637, 13-18.

PAPERS UNDER REVIEW (2)

- Zach G. Zacharia, Scott C. Ellis, Saif Mir, Robert J. Trent - "Gaining Advantage Through Social Exchange: How and Under What Conditions" (Revise and Resubmit)

- **Saif Mir, Timothy W. Breitbach, Zach G. Zacharia, Benjamin T. Hazen "Supplier Cultivation: An Accelerator Approach to Ecosystem Innovation" (Under Review)**

NON - REFEREED PUBLICATIONS (5)

5. **Zach G. Zacharia** (2020), What Every CFO Needs to Know about Supply Chains

4. **Zach G. Zacharia** (2019), Supply Chain Collaboration in Transformative Vertical Industries (Implications of Omnichannel and Drop Shipping)

3. Robert J. Trent, **Zach G. Zacharia,** (2012) "The Wisdom of Becoming a Preferred Customer," *Supply Chain Management Review* Vol. 16, No. 6, 10-18.

2. Nix, W. Nancy, Robert F. Lusch, **Zach G. Zacharia**, and Wesley R. Bridges, (2007) "The Hand That Feeds You – What Makes Some Collaborations with Suppliers Succeed – When So Many Fail?" *The Journal Report- Business Insight* (A Joint Venture with MIT *Sloan Management Review* and *Wall Street Journal*), Dow Jones and Company

1. **Zacharia, Zach G**. (1994) "Expert System Simplifies Bridge Paint Maintenance Programs," *Materials Performance,* June, 25 - 28.

CONFERENCE PROCEEDINGS (18)

18. **Zach Zacharia**, Timothy Breitbach, Ben Hazen, Saif Mir (2019) "Utilizing Accelerator Programs for adopting Innovations to Encourage the Adoption" *CSCMP Conference,* Anaheim, CA, September 15.
17. **Zach Zacharia**, Timothy Breitbach, Ben Hazen, Saif Mir (2018) "Utilizing Accelerator Programs to Encourage the Adoption of New Innovations in Large Organizations" *DSI Conference,* Chicago, IL, November 17.
16. Robert Weidmer, **Zach Zacharia**, (2018) "Competing Governance Mechanisms in Buyer-Supplier Relationships" *DSI Conference,* Chicago, IL, November 16.
15. **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "The Role of Coopetition in Buyer Supplier Relationships" *DSI Conference,* Washington, DC, November 18.
14. **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "Understanding the Antecedents and Outcomes of Coopetition" *CSCMP Academic Research Conference,* Atlanta, Georgia, September 24.
13. **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "The Evolving Role of Coopetition within the Supply Chain" *CSCMP European Research Seminar,* Barcelona, Spain, May 19.
12. Gouda, Sirish, **Zach Zacharia**, Haritha Saranga (2016) "Linking New Forms of Work Organization and External Integration: Mediating role of cross functional collaboration" *DSI Conference,* Austin, Texas, November 21.
11. Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of apologies following transgressions in buyer-supplier relationships." *CSCMP Educator Conference,* Orlando, Florida, September 25.
10. Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of transactional and relational psychological contract breach in supplier switching behavior." *CSCMP European Research Seminar,* Vienna, Austria, May 13.
9. Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2015) "Should I stay or should I go? The role of transactional and relational psychological contract breach in supplier switching behavior." *CSCMP Educator Conference,* San Diego, California, September 27.
8. **Zacharia, Zach G.,** Nancy W. Nix and Robert F. Lusch (2007) "Supply Chain Collaborations: Project Performance and Business Performance" *18th North American Teaching and Research Conference,* Tempe, Arizona, March 29-31.

7. **Zacharia, Zach G.** (2005) "Team Based Learning in MBA and Undergraduate Supply Chain Management Classes" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19.

6. Nix, Nancy W., **Zach G. Zacharia** and Robert F. Lusch (2005) "Keys to Effective Supply Chain Collaboration" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19.

5. **Zacharia, Zach G.** and Marc E. Ruzicka (2003) "Experiential Learning: Live Business Cases in MBA Supply Management and Logistics Classes" *14th North American Teaching and Research Conference,* Tempe, Arizona , March 21- 23.

4. **Zacharia**, **Zach G** (2000) "The Evolution and Growth of Production in the Supply Chain", *Society for Marketing Advances Conference*, Orlando, Florida, November 8-10.

3. **Zacharia, Zach G**., John E. Tidwell and Stephen H. Richards (2000) "An Overview of Truck and Bus Safety:1999 Knoxville Symposium," *4th International Fatigue Management Conference*, Perth, Australia, March 19-2.

2. **Zacharia, Zach G**. and Bart Jennings (1998), "The Use of Active Participation and Group Competition to Facilitate Training and Technology Transfer for Adult Learners," *Transportation Research Board Conference Proceedings,* Washington, District of Columbia, January 4-8.

1. **Zacharia, Zach G**. (1992), "Bridge Paint Expert Systems"*, Second International Organization for Economic Cooperation and Development (OECD) Conference on Knowledge Based Expert Systems in Transportation*, Montreal, Canada, April 3-7.

CONFERENCE PRESENTATIONS (3)

3. **Zach Zacharia**, (2022) "Identifying and Ranking Supply Chain Risks" *WDSI Conference,* Waikoloa, HI, April 7.

2. Annibal Sodero**, Zach Zacharia**, (2022) "Antecedents and outcomes of drop-shipping adoption in the retail supply chain" Euroama Conference, Berlin, July 3rd

1. Saif Mir**, Zach Zacharia**, (2022) "Risks in Procurement and Sourcing" DSI Conference Houston, November 21

PODCASTS (5)

- **Zacharia, Zach G**. (2021), "Red Flags in the Supply Chain" https://business.lehigh.edu/blog/2021/zach-zacharia-red-flags-supply-chain (July 2nd)

- **Zacharia, Zach G**. (2021), "Red Flags in the Supply Chain" https://business.lehigh.edu/blog/2021/zach-zacharia-red-flags-supply-chain (July 2nd)

- **Zacharia, Zach G**. (2021), "Disruptive New Paradigm of the Physical Internet" https://business.lehigh.edu/blog/2021/zach-zacharia-disruptive-new-paradigm-physical-internet (June 3rd)

- **Zacharia, Zach G**. (2018), "Dealing with Disruptive Innovations in the Supply Chain" (https://cbe.lehigh.edu/blog/posts/dealing-disruptive-innovations-supply-chain) (October 24)

- **Zacharia, Zach G**. (2017), "Drop Shipping: A New Opportunity for Retailers and Suppliers" (https://cbe.lehigh.edu/blog/posts/drop-shipping-new-opportunity-retailers-and-suppliers) December 11

- **Zacharia, Zach G**. (2017), "What You Need to Know About the Physical Internet" (https://cbe.lehigh.edu/blog/posts/what-you-need-know-about-physical-internet (March 14) (Ranked 4th in Google Search for Physical Internet)

WORKING PAPERS (6)

- Zach Zacharia, Michael Plasch, Markus Gerschberger "Explorative and exploitative motives for coopetition" *Target: International Journal of Production Economics*

- Zach Zacharia, Annibal Sodero "Drop Shipping and its Effects on the New E-Commerce Retail Paradigm" *Target: Journal of Operations Management"*

- Zach Zacharia, Robert Wiedmer, Kimberly Whitehead "Competing Governance Mechanisms in Buyer-Supplier Relationships" *Target: Journal of Operations Management*

- Zach Zacharia, Cedric Heuchenne, Nada Sanders, Faraz, Alireza "Comparison of populations based on binary characteristics in the presence of non-response" *Target: Production Operations Management Journal*

- Zach Zacharia, Gopal Kumar "Environmental and social performance leads to supply chain performance? An analysis in context of sustainable collaboration" *Target: Supply Chain Management: An International Journal*

- Zach Zacharia, Benjamin Hazen, Timothy Breitbach, Saif Mir "How Accelerator Programs Facilitate Innovation Adoption in Large Organizations" *Target: Journal of Operations Management*

27. Honors and Awards (25)

2023	DATA Department Service Award, Lehigh University
2018	Teaching Innovation Grant, CBE, Lehigh University
2018	Senior Associate Editor for *International Journal of Logistics Management*
2017	Best Reviewer Award *Journal of Business Logistics*
2016	Editor for *Journal of Business Logistics News*
2016	Associate Editor for *Production Operations Management* Special Issue
2015	Associate Editor for *Journal of Business Logistics*
2015	Member of the *Transportation Journal* Editorial Board
2013	Robert and Christine Staub Faculty Excellence Award
2012	Member of the *Journal of Supply Chain Management* Editorial Board
2011	Best Paper Finalist for 2010 (*Journal of Operations Management*)
2011	Best Paper Award (European DSI Conference)
2010-2011	Council of Supply Chain Management Professional Educator Conference Chair
2010	Member of the *Journal of Operations Management* Editorial Board
2010	Member of the *Journal of Business Logistics* Editorial Board
2009-2010	Supply Chain Management Educator Conference Proceedings Editor
2007-2008	Council of Supply Chain Management Case Editor
2007	Best Paper Award (*NARTS-ISM Conference*)
2006	Tied for highest SPOT (Student Perception of Teaching) score
2005	Highest SPOT (Student Perception of Teaching) in INSC department
2000	Doctoral Dissertation Proposal Award (*University of Arkansas)*
2000	Outstanding Student Paper Award *(Society for Marketing Advances)*
2000	Finalist *(ISBM Doctoral Dissertation Award)*
2000	Scholarly Research Grant Recipient *(University of Tennessee)*
1999, 1997	Fellow *(Council of Logistics Management Doctoral Symposium)*

28. Research Funding (16)

2019	DiCentral – SCM and Financial Flow Research $20,000
2019	Ben Franklin Technology Partners and ESPI $20,000
2018	AFIT – Managing Customer Driven Coopettittion Projects $25,000
2017	DiCentral – Drop Shipment Research $20,000
2014-2015	International Travel Grant - One of 5 recipients selected across the entire University $5000
2011	Faculty Research Grant – Lehigh University (Principal Investigator), Catherine Ridings (Lehigh University) " Does investment in Supply Chain Management and Information Technology provide value for micro firms?" $4500
2009	Summer Research Grant – College of Business and Economics, Lehigh University (Principal Investigator), Nada R. Sanders (Lehigh University, Brian S. Fugate (Colorado State University) *"State of Supply Chain Management: A Visionary Perspective"* $3000
2002-2007	Charles Tandy American Enterprise Center Faculty Research Award *(Texas Christian University)* ($10,000/yr)
2003, 05, 07	Junior Faculty Research Grant *(Institute of Supply Management)* ($750/yr)
2005	Research Center for Teaching Excellence, Faculty Fellow Grant *(Texas Christian University)* ($2500)

F. Scholarly Presentations (79)

- **Zacharia, Zach G.,** "*Supply Chain Collaboration in Transformative Vertical Industries"* Retail Value Chain Federation Conference, Teaneck, New Jersey, May 6, 2019

- **Zacharia, Zach G.,** "*Theoretical and Conceptual Foundations of Supply Chain Management"* PhD Research Seminar, Indian Institute of Technology, New Delhi, January India, January 25, 2018.

- **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger "*The Role of Coopetition in Buyer Supplier Relationships*" *DSI Conference,* Washington, DC, November 18, 2017

- **Zacharia, Zach G.,** "*Utilizing Drop Shipment to Improve Your Bottom Line"* Retail Value Chain Federation Conference, Phoenix, Arizona, November 6, 2017

- **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger "*Understanding the Antecedents and Outcomes of Coopetition*" *CSCMP Academic Research Conference,* Atlanta, Georgia, September 24, 2017

- **Zacharia, Zach G.,** "*Complexity in Supply Chain Management"* PhD Research Seminar, Atlanta, Georgia, September 23, 2017

- **Zacharia, Zach G.,** "*Coopetition Research"* PhD Research Seminar, Atlanta, September 22, 2017

- **Zacharia, Zach G.,** "*Buyer Supplier Relationships"* PhD Research Seminar, Atlanta, September 21, 2017

- **Zacharia, Zach G.,** "*Publishing Research in American Supply Chain Journals"* Indian Institute of Technology, New Delhi, India, July 21, 2017.

- **Zacharia, Zach G.,** "*Transforming Traditional Networks Through the Use of Collaborative Environments"* Supply Chain Leaders in Action Conference, Naples, Florida June 5, 2017

- **Zach Zacharia**, Michael Plasch, Usha Mohan, Markus Gerschberger (2017) "*The Evolving Role of Coopetition within the Supply Chain*" CSCMP European Research Seminar*,* Barcelona, Spain, May 19.

- **Zacharia, Zach G.,** "*Logistics PhD programs in the US panel session"* Logistics Doctoral Symposium, Auburn University, Auburn, February 24, 2017.

- **Zacharia, Zach G.,** "*A Research Journey"* Indian Institute of Technology, Trichy, India, February 6, 2017.

- **Zacharia, Zach G.,** "*Orientation and Firm Infrastructure"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 12, 2017

- **Zacharia, Zach G.,** "*Strategy"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 11, 2017

- **Zacharia, Zach G.,** "*Conceptual Foundations from Procurement and Operations"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 10, 2017

- **Zacharia, Zach G.,** "*Conceptual Foundations from Marketing and Logistics"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria January 9, 2017

- **Zacharia, Zach G.,** "*Theoretical and Conceptual Foundations of Supply Chain Management"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 10, 2016

- **Zacharia, Zach G.,** "*Philosophy of Science"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 9, 2016

- **Zacharia, Zach G.,** " *Conceptual Foundations of Marketing"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 8, 2016

- **Zacharia, Zach G.,** " *Conceptual Foundations of Operations"* PhD Research Seminar, Logistikum, University of Applied Sciences, Steyr, Austria August 10, 2016

- Gouda, Sirish, **Zach Zacharia**, Haritha Saranga (2016) "Linking New Forms of Work Organization and External Integration: Mediating role of cross functional collaboration" *DSI Conference,* Austin, Texas, November 21.

- Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of apologies following transgressions in buyer-supplier relationships." *CSCMP Educator Conference,* Orlando, Florida, September 25.

- **Zacharia, Zach G.,** " *Increasing Efficiency and Reducing Cost within a Supply Chain"* Indian Institute of Technology, Madras, India, June 13 2016.

- Blessley, Misty, Saif Mir, **Zacharia, Zach G.,** John Aloysius (2016) "The role of transactional and relational psychological contract breach in supplier switching behavior." *CSCMP European Research Seminar,* Vienna, Austria, May 13.

- Bleasley, Misty, Mir, Saif, **Zacharia, Zach G.,** Aloysius, John " *Should I stay or should I go? The role of transactional and relational psychological contract breach in supplier switching behavior"* Council of Supply Chain Management Educator Conference, San Diego, September 27, 2015.

- **Zacharia, Zach G.,** "*Qualitative and Quantitative Research Paths in SCM"* , University of Arkansas, Fayetteville, Arkansas Feb 27, 2015.

- **Zacharia, Zach G.,** "*Publishing Research in American Supply Chain Journals"* Indian Institute of Management, Bangalore, India, January 13, 2015.

- **Zacharia, Zach G.,** Scott Ellis, Robert J. Trent "*Gaining Advantage Through Social Exchange: How and Under What Conditions"* Production Operation Management Conference, Atlanta, Georgia, May 10, 2014.

- Ellis, Scott, **Zacharia, Zach G.,** Jae-Young Oh "*The Role of Functional Congruence in Cross-Functional and Inter-organizational Collaboration"* Decision Sciences Institute Conference, Baltimore, Maryland, November 19, 2013.

- **Zacharia, Zach G.,** "*Supply Chain Management, Collaboration and their Role Across Businesses and People"* Congress of Latin American Engineering Students, Lima, Peru, October 29, 2013.

- **Zacharia, Zach G.,** Scott Ellis, "*Antecedents to Buyer-Engineer Knowledge Transfer"* Production Operation Management Conference, Denver, Colorado, May 4, 2013.

- **Zacharia, Zach G.,** "*Balancing Effective Research and Teaching"* – Invited Panel Presentation, Council of Supply Chain Management Doctoral Symposium, Atlanta, Georgia, October 1, 2012.

- **Zacharia, Zach G.,** "*What are some of the Factors That Affect the Relationship Between Cross Functional New Product Development and New Product Project Performance?"* Decision Sciences Institute Conference, Boston, Massachusetts, November 22, 2011.

- **Zacharia, Zach G.,** "*Supply Chain Security - An Academic Discussion and Future Research"* Invited Panel Presentation, Decision Sciences Institute Conference, Boston, Massachusetts, November 21, 2011.

- **Zacharia, Zach G.,** "*Conference Chairperson Opening Remarks"* Council of Supply Chain Management Educator Conference, Philadelphia, Pennsylvania, October 2, 2011.

- **Zacharia, Zach G.,** William F. Wempe William and Danny Lanier, Jr. "*Concentrated Supply Chain Membership and Financial Performance: Chain- and Firm-Level Perspectives"* Academy of Management Conference, San Antonio, Texas, August 12 – August 17, 2011.

- **Zacharia, Zach G.** and Catherine M. Ridings *"Does investment in Supply Chain Management and Information Technology provide value for micro firms?"* Production Operations Management Conference, Reno, Nevada, April 28-May 1, 2011.

- **Zacharia, Zach G.** and Robert J. Trent *"Supplier Satisfaction and Innovation Sharing"* Decision Sciences Institute Conference, San Diego, November 20-23, 2010.

- Christoph Bode, Stephan M. Wagner and **Zacharia, Zach G.,** "*The Effect of Cooperation, Supplier Development, and Relationship-Specific Investments on Suppliers' Willingness to Share Innovation"* Decision Sciences Institute Conference, San Diego, November 20-23, 2010.

- **Zacharia, Zach G.** *"Personal Career Development in Academia: What now and How"* Council of Supply Chain Management Professionals Doctoral Symposium, San Diego, September 27, 2010.

- **Zacharia, Zach G.** *"Supply Chain Management Overview"* Executive MBA Program, Universidad de Piura, Piura, Peru, June 12, 2010.

- **Zacharia, Zach G.** *"Supply Chain Management Collaboration Strategies"* CSCMP Roundtable, Lima, Peru, June 11, 2010.

- **Zacharia, Zach G.** and John R. MacDonald *"Are differences in Risk Planning Significant?"* Production and Operations Management Conference, Vancouver, Canada, May 7-10, 2010.

- **Zacharia, Zach G.** and Robert J. Trent *"Supplier Satisfaction – How does it matter?"* Production and Operations Management Conference, Vancouver, Canada, May 7-10, 2010.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Organizational Learning"* 19th *North American Teaching and Research Conference,* Tempe, Arizona, March 11-12, 2010

- **Zacharia, Zach G.** and John R. MacDonald *"Risk Planning: Is it of Value"* Decision Sciences Institute Conference, New Orleans, LA, November 17, 2009.

- **Zacharia, Zach G.** *"When Should New Product Development Managers Consider Distribution Logistics"* Decision Sciences Institute Conference, New Orleans, LA, November 15, 2009.

- John R. MacDonald and **Zacharia, Zach G.** *"Risk and Disruption Management: The Impact of Behavioral Interference"* Behavioral Operations Conference, Syracuse, NY, June 26, 2009.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Organizational Learning"* Production and Operation Management Conference, Orlando, FL, May 2, 2009.

- **Zacharia, Zach G.,** Nancy W. Nix and Robert F. Lusch "Supply Chain Collaborations: Project Performance and Business Performance" *18th North American Teaching and Research Conference,* Tempe, Arizona, March 29-31. (2007)

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Organizational Learning"* University of Tennessee, Knoxville, TN, November 7, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"The Moderating Role of Absorptive Capability and Collaborative Communication in Knowledge Acquisition"* DFWCSMP Roundtable meeting, Dallas, TX, October 12, 2006.

- **Zacharia, Zach G.,** *"Early Supplier Involvement"* National Council for Advanced Manufacturing, Washington, MD, June 7, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Keys to Effective Supply Chain Collaboration and Knowledge Acquisition"* National Council for Advanced Manufacturing, Washington, MD, June 7, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Keys to Effective Supply Chain Collaboration"* Supplier Network Working Group Meeting, Fort Worth, TX March 16, 2006.

- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Keys to Effective Supply Chain Collaboration"* Institute of Supply Management Group Meeting, Fort Worth, Texas, January 3, 2006.

- **Zacharia, Zach G.** "Team Based Learning in MBA and Undergraduate Supply Chain Management Classes" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19. (2005)

- Nix, Nancy W., **Zach G. Zacharia** and Robert F. Lusch "Keys to Effective Supply Chain Collaboration" *16th North American Teaching and Research Conference,* Tempe, Arizona, March 17-19. (2005)

- **Zacharia, Zach G.,** *"Education Strategies"* Council of Logistics Roundtable Leadership Forum, Chicago, Illinois, June 11-12, 2004.
- **Zacharia, Zach G.,** and Nancy W. Nix, *"Supply Chain Collaboration – The role of a 3PL intermediary"* Society of Marketing Advances, New Orleans, Louisiana, November 6 - 8, 2003.
- **Zacharia, Zach G.,** Nancy W. Nix, and Robert F. Lusch *"Collaboration Effectiveness in the Supply Chain: A Knowledge and Capabilities Based Approach"* American Marketing Faculty Consortium, Dallas, Texas, October 30-November 2, 2003.

- **Zacharia, Zach G.,** *"What does it mean to be an education officer in your roundtable?"* Council of Logistics Roundtable Leadership Forum, Chicago, Illinois, June 6-7, 2003.

- Nix, Nancy W. and **Zach G. Zacharia**, Track Chairs "*Going Beyond the Hype: Getting and Measuring the Value from your Supply Chain Initiatives"* Council of Logistics Management Conference, Chicago, Illinois, September 23-27, 2003.
- **Zach G. Zacharia,** *Top 10 Truck Safety Recommendations*, Federal Motor Carrier Safety Administration, Washington, District of Columbia, October 16, 2002.
- **Zach G. Zacharia,** *Logistics Involvement in New Product Development*, University of Arkansas, Fayetteville, Arkansas, September 18, 2002.
- **Zach G. Zacharia,** "Supply and Value Chain Certificate Program" presented at the Supply and Value Chain Conference, Ft. Worth, Texas, February 8, 2002.
- **Zach G. Zacharia,** "*Tennessee Transportation Assistance Program*" presented at the Region 4 LTAP conference, St. Petersburg, Florida, May 16, 2001.
- **Zach G. Zacharia,** "*The Evolution and Growth of Production in the Supply Chain*", *2000 Society for Marketing Advances Conference*, Orlando, Florida, November 8. 2000.
- **Zach G. Zacharia,** and Soonhong Min "*The Nature of Interfirm Partnering in Supply Chain Management*" presented at American Marketing Association, Chicago, Illinois, August 5, 2000.
- **Zach G. Zacharia,** *"Searching the Internet and Web Page Design"* presented at University of Tennessee, Knoxville, Tennessee, April 17, 2000.
- **Zach G. Zacharia,** *"An Overview of Truck and Bus Safety: 1999 Knoxville Symposium* presented at the 4th International Fatigue Management Conference, Perth, Australia, March 19 – 22, 2000.
- **Zach G. Zacharia,** "*Traffic Safety and the Internet*" presented at the Governor Highway Safety Conference, Memphis, Tennessee, July 12-14, 1999.
- **Zach G. Zacharia,** "*Tennessee Transportation Assistance Program*" presented at the Asphalt Emulsion Users Conference, Nashville, Tennessee, November 19, 1998.
- **Zach G. Zacharia** and Barton R. Jennings "*The Use of Active Participation and Group Competition to Facilitate Training and Technology Transfer for Adult Learners*" Transportation Research Board Conference, Washington, District of Columbia, January 10-14, 1998.
- **Zach G. Zacharia,** "*Training Requirements for Local Governments*" presented at the National Transportation Training Conference, Reno, Nevada, October 7-9, 1997.
- **Zach G. Zacharia,** "*Logistics Thought: Key Messages and Implications from the Field of Marketing*," presented at the Council of Logistics Management Doctoral Symposium, Chicago, Illinois, October 3-4, 1997.

- **Zach G. Zacharia,** "*Navigating the Internet*" presented at the Southeast Local Roads Conference, Biloxi, Mississippi, September 24-26, 1997.
- **Zach G. Zacharia,** "*Bridge Paint Expert Systems,"* presented at the Second International Organization for Economic Cooperation and Development (OECD) Conference on Knowledge Based Expert Systems in Transportation, Montreal, Canada, June 14-16, 1992.

G. Teaching and Research Advising

COURSES:

Lehigh University (2008 – Present)

- SCM 186 - Supply Chain Management and Operations (Undergraduate 2008 - present)
- SCM 354 - Logistics and Transportation (Undergraduate 2008-present)
- GBUS 453 – Logistics and Transportation (Graduate 2013 – present)
- GBUS 492- Supply Chain Management Strategy (Graduate 2010- 2015) (Summer Course)
- Advising 14 Supply Chain Management Majors (2021)
- Advising 11 Supply Chain Management Majors (2020)
- Advising 21 Supply Chain Management Majors (2019)
- Advising 5 Supply Chain Management Majors (2018)
- Advising 24 Supply Chain Management Majors (2017)
- Advising 9 Supply Chain Management Majors (2016)
- Advising 27 Supply Chain Management Majors (2015)
- Advising 28 Supply Chain Management Majors (2014)
- Advising 24 Supply Chain Management Majors (2013)
- Advising 9 Supply Chain Management Majors (2012)
- Advising 10 Supply Chain Management Majors (2011)
- Advising 13 Supply Chain Management Majors (2010)
- Advising 6 Supply Chain Management Majors (2009)

Texas Christian University (2001 – 2008)

- Strategic Sourcing and Procurement (Professional MBA) 2007
- Business Simulation (Professional MBA) 2007
- Supply Chain Management Concepts (Full-Time MBA) 2005 – 2008
- Supply Chain Management Concepts (Professional MBA) 2001– 2008
- Logistics and Transportation (Professional MBA) 2001 - 2008
- Supply Chain Tools and Technologies (Professional MBA) 2002
- Logistics and Transportation (Undergraduate) 2001 - 2008
- Supply Chain Management Concepts (Undergraduate) 2003 – 2004
- Supply Chain Tools and Technologies (Undergraduate) 2003
- Procurement and Supply Management (Undergraduate) 2003

University of Tennessee (1996-2001)

- Introduction to Transportation (Undergraduate) Summer 1998
- Introduction to Logistics (Undergraduate) Summer 1999
- Marketing Management (Undergraduate) Spring 2000
- Global Logistics and Transportation (Undergraduate) Summer 2000

H. SERVICE

University

Faculty Compensation Committee (2016 – 2019)

College

Director, Center for Supply Chain Research Lehigh
Promotion and Tenure Committee (2021 – onwards)
Chair, Database and Software Committee (2018 – onwards)
Ph.D. Task Force (2017)
Undergraduate Core Curriculum Committee (2016)
Math Committee to Assess Assessment Results (2010)

Department

BIS Assistant Professor Search Chair – Tenure Track (2021-2021)
SCM Assistant Professor Search Chair – Tenure Track (2020-2020)
DATA Department Chair Search – Tenure Track (2019-2019)
SCM Assistant Professor Search Chair – Tenure Track (2018-2018)
SCM POP Search Chair (2017-2017)
Research Seminar Committee (2010-2011)
SCM Club Faculty Liaison (2009-2019)

Professional (Council of Supply Chain Management Professionals)

Education Committee Member -Lehigh Valley Roundtable (2015-onwards)
President – Lehigh Valley Roundtable (2012-2015)
Education Conference Chair (2010 – 2011)
Education Strategies Committee Member (2007 – 3-year term)
Case Editor (3-year term)
President – Dallas Roundtable (2007-2008)
Vice President – Dallas Roundtable (2006-2007)
Education chair – Dallas Roundtable (2004-2006)
Member (1999 – onwards)

External Service

Rockefeller Group – Expert Service Consulting (Jan 2020)

Exhibit B.II. Letters documenting at least 10 years of full-time experience in your occupation

Jun 30, 2026

Re: Employment Verification for Guilherme Pereira Da Silva Alves

To Whom it May Concern,

This letter is to confirm the employment details of Guilherme Pereira Da Silva Alves at Gusto Canada ULC.

Employment Details:

Current Status: Active

Hire Date: Apr 08, 2026

End Date: ------

Job Title: Gusto Entity Management - Engineering

Base Salary: $244,400.00

Work Location: Home Office - Alberta

Gusto, Inc (formerly ZenPayroll, Inc), is a company that provides a cloud-based payroll, benefits, and human resource management solution for businesses based in the United States. Please reach out directly to hr@gusto.com if further information is needed. Thank you!

Sincerely,



Scott Helmes

People Director

Gusto | 525 20th St San Francisco | www.gusto.com

deel.

Deel Canada Services Inc.
700 West Georgia Street, Suite 2200
Vancouver, BC V7Y 1K8
Canada
+18677940615
Registration number: 725776330BC0001
VAT ID: 725776330RT0001

Jul 3, 2026

Experience Letter

To Whom It May Concern,

This letter certifies that Guilherme Pereira Da Silva Alves, was a previous permanent full-time employee at Deel Canada Services Inc., from Mar 4, 2024, until Apr 8, 2026, holding the position of Software Developer, earning C$ 244,400.00 a year.

Feel free to contact us if you have any questions or concerns via our 24/7 live chat or through this form, to our call back request phone number **+1 (867) 794-0615** or by email at eor.verification@deel.com

Alex Bouaziz

Alexandre Bouaziz
Chief Executive Officer



deel.

Deel Canada Services Inc.
700 West Georgia Street, Suite 2200, Vancouver, BC,
V7Y 1K8, CA,
+18677940615
Registration number: 725776330BC0001

January 26th, 2026

Employment Verification

To Whom It May Concern,

This letter certifies that Guilherme Pereira Da Silva Alves is a current permanent Full-time employee at Deel Canada Service Inc, located at 700 West Georgia Street, Suite 2200, Vancouver, BC, V7Y 1K8, CA.

Guilherme Pereira Da Silva Alves has been with Deel Canada Service Inc. since March 4th, 2024 currently as a Software Developer, earning CAD 244400.00 a year.

Guilherme Pereira Da Silva Alves job responsibilities is as follows:

General Purpose

The Software Developer's position requires to use software development languages and tools to research, design, implement, manage, test, and evaluate software programs.

Duties and Responsibilities

- Researching, designing, managing software programs
- Testing and evaluating new programs
- Modifying software to fix error, improve its performance
- Deploying software tools, processes and metrics
- Directing software programming and documentation development
- Writing and implementing code
- Preparing reports on programming project specifications, activities, or status
- Consulting with engineering staff to evaluate software-hardware interfaces and develop specifications and performance requirements.

Feel free to contact us if you have any questions or concerns via our 24/7 live chat or through this form.

Alexandre Bouaziz

February 26, 2026

To Whom It May Concern.

The purpose of this letter is to provide proof of work experience for **Guilherme Pereira Da Silva Alves** with Tophatmonocle Corp. (' Top Hat').

Job Title. Senior Software Engineer (NOC. 21232)
Employment Dates. March 1, 2021–January 30, 2024
Compensation.

- Effective March 1, 2021. $140,000.00 CAD annual base salary
- Effective April 1, 2022. $150,000.00 CAD annual base salary
- Effective July 1, 2023. $156,000.00 CAD annual base salary

Job Status. Permanent full-time, 40 hours per week
Job Duties and Responsibilities.

- Work in a dynamic, cross-functional scrum team and contribute ideas to design and planning discussions.
- Implement new features and core services in the Top Hat platform, providing solutions to exciting new challenges.
- Work closely with Top Hat's design, product, and architecture teams to help bring beautiful, usable, and scalable features to life.
- Refactor, optimize and improve the Top Hat platform used by over a million students.
- Improve application performance and reliability.

Please do not hesitate to contact me at hr@tophat.com if you have any questions related to their employment with Top Hat.

Sincerely,

Larry Indovina
Chief Operating Officer

BOLD COMMERCE
200-1460 Chevrier Blvd. Winnipeg, Manitoba, R3T 1Y6
P: 204-808-8095 | F: 204-808-8094
boldcommerce.com

April 30, 2026

To Whom it May Concern,

This letter is to certify that Mr. Guilherme Alves worked as a full-time intermediate developer at Bold Commerce Inc. from February 19, 2019 to February 18, 2021. His jobs duties included the following:

- Designs, develops, and maintains software features and applications aligned with business requirements
- Collaborates with cross-functional teams (product, design, QA) to deliver high-quality, scalable solutions
- Writes clean, efficient, and well-documented code following established development standards
- Troubleshoots, debugs, and resolves technical issues to ensure system performance and reliability
- Contributes to code reviews and continuous improvement of development processes and best practices

If you have any questions regarding his employment, then please feel free to contact me at 204-808-8095 or at my email below.

Sincerely,

Katie Dueck

Katie Dueck
Director of People Experience, HR Business Partner
katie.dueck@boldcommerce.com

March 23, 2026

To Whom It May Concern,

This letter is to certify that Mr. Guilherme Pereira da Silva Alves worked as a full-time Product Manager at Soluti - Solucoes em Negocios Inteligentes S/A. company from March 2015 to January 2019. In this position, he has demonstrated consistent career progression, showcasing increasing levels of responsibility and expertise in his field, with a monthly salary of R$ 8.387,58. His job duties as the Software Engineering Manager included the following:

- Led a cross-functional team of 14 developers at Soluti, a leading company in Digital Certificates in Brazil
- Successfully launched more than 4 strategic applications, improving business operations
- Developed a private cloud infrastructure that served as the base for the SaaS platform
- Restructured and modernized the entire SaaS platform used by partners to manage the lifecycle of a digital certificate emission
- Implemented features encompassing identity validation, fraud prevention, digital certificate authorization, emission and invalidation, and document upload
- Established hot and cold storage for documents, ensuring 10 years of storage
- Facilitated company growth from 20 partners to more than 100 partners
- Increased digital certificate emissions from around 100,000 per year to almost 500,000
- Optimized software development processes by implementing Agile methodologies, resulting in a 30% increase in project completion speed

Please do not hesitate to contact me at rh@soluti.com.br or +55 6299949-8937, should you have further questions regarding Mr. Guilherme Pereira da Silva Alves's employment or qualifications.

Sincerely,

Nara Saddi
HR Director

Address:
Av. Fued José Sebba, 700 – Jardim Goiás
Goiânia, GO, 74805-100, Brazil

Email:
rh@soluti.com.br

indra

DECLARATION

We declare for proper purposes that Mr. GUILHERME PEREIRA DA SILVA ALVES, bearer of CPF 014671021-56 RG No. 4173164 SSP / GO PASSPORT FP729490V was part of the INDRA BRASIL SOL SERV.TEC.SA employee registry under the CNPJ: 01.645.738 / 0003-300, at the address: Avenida T-7 Nº 371 - West Sector 17º andar, Salas 1711 and 1712 Goiânia, GO - CEP: 74.140-110 - from 07/05/2013 to 21.03.2015 as PROGRAMMER developing the following activities.
Designed the architecture of the systems, according to customer's assumptions;
Led development team on best development practices;
Led development team to deliver the releases within the time limit;
Developed systems systems using PHP, SQL Server, CSS Bootstrap, jQuery and other technologies.

Brasilia October 04, 2018.

Cícera Maria G. A Silva
Analista de Depto Pessoal
Indra Brasil Sol. Serv. Tec

Cicera Maria G. de A.Silva
STAFF DEVELOPMENT ANALYST
DRH-Staff Coordination
Northern Banking Sector, Block 01, Block F
15th and 16th floors
Brasília, DF - CEP: 70040-908

Exhibit B.III. Professional certification

zend CERTIFIED ENGINEER 2017-PHP

RogueWave SOFTWARE

Guilherme Pereira da Silva Alves

Has successfully completed the test requirements
and demonstrated the knowledge and skills
to be recognized as a

ZEND CERTIFIED PHP ENGINEER

Candidate ID - ZEND030357

Registration ID - 319926910

Zeev Suraski
CTO & VP Engineering, Zend

RogueWave SOFTWARE
Accelerating Great Code

Dear Guilherme Pereira da Silva Alves,

Congratulations on passing the Zend Certified Engineer 2017-PHP exam! Being a Zend Certified Engineer puts you among an elite group that will continue to lead the growth of PHP.

The benefits you inherit by becoming a Zend Certified Engineer include:

- Global recognition of your PHP skills
- Advantage over competitors when looking for a new job; or at your annual salary review
- Listing on the Zend Certified Engineer Directory for PHP Professionals
- ZCE LinkedIn Group membership
- Discounts on selected Zend PHP conferences

Whether you are distributing an application, seeking employment, bidding on contract work, or pursuing career advancement, your new status as a Zend Certified Engineer provides tangible and verifiable advantages.

You are welcome and encouraged to add the Zend Certified Engineer 2017-PHP logo, found at: http://www.zend.com/services/certification/zce-logo on your website or online resume with a link back to Zend that documents and authenticates your status. Use the link: http://www.zend.com/en/yellow-pages#show-ClientCandidateID=ZEND030357

You can now add web links (example: your company site, LinkedIn, Twitter, Odesk) and a short bio to your listing in the ZCE Directory. Just go to your ZCE Profile tab in your Zend Account.

To join the Zend Certified Engineer LinkedIn group, after setting up your LinkedIn account, use the following invitation link: https://www.linkedin.com/groups/42193/profile

Your free perpetual Zend Studio license should be in your Zend Account under the License tab.

For your **Zend Server Developer Edition** please go to:
https://www.zend.com/en/products/server/developer-editions-comparison
Scroll to bottom and select Apply Now for the FREE ZCE License

Sincerely,

Susie Pollock | Training Coordinator
Rogue Wave Software, Inc.
Accelerating Great Code
http://www.roguewave.com / susie.pollock@roguewave.com

Exhibit B.IV. Evidence of high salary or other significantly high remuneration

WINNIPEG MB R3C 3M2

000267819

GUILHERME
PEREIRA DA SILVA ALVES
361 COPPERFIELD BLVD SE
CALGARY AB T2Z 4C8

Notice details

Social insurance number	XXX XX4 812
Tax year	2025
Date issued	Apr 14, 2026

Notice of reassessment

We reassessed your 2025 income tax and benefit return and recalculated your balance.

You have a refund of **$58.75**.

We will deposit your refund into your bank account.

Thank you,

Bob Hamilton
Commissioner of Revenue

Account summary

You have a refund in the amount shown below.

Refund: $58.75

Go paperless!

Get your mail online through **My Account**.

1. Log in at **canada.ca/my-cra-account**.
2. Select "Manage online mail".

Notice details

Social insurance number	XXX XX4 812
Tax year	2025

GUILHERME
PEREIRA DA SILVA ALVES
361 COPPERFIELD BLVD SE
CALGARY AB T2Z 4C8

Tax reassessment

We calculated your taxes using the amounts below. The following summary is based on the information we have or you gave us.

We may review your return later to verify income you reported or deductions or credits you claimed. For more information, go to **canada.ca/taxes-reviews**. Keep all your slips, receipts, and other supporting documents in case we ask to see them.

Note, **DR** (debit) is the amount you owe us and **CR** (credit) is the amount we owe you.

Summary

Line	Description	$ Amount on last assessment	CR/DR	$ Final amount	CR/DR
15000	Total income	240,350		240,350	
	Deductions from total income	1,436		1,436	
23600	Net income	238,914		238,914	
26000	Taxable income	238,914		238,914	
35000	Total federal non-refundable tax credits	9,612		9,650	
61500	Total Alberta non-refundable tax credits	7,181		7,201	
42000	Net federal tax	44,580.37		44,541.83	
42800	Net Alberta tax	17,838.54		17,818.33	
43500	Total payable	62,418.91		62,360.16	
43700	Total income tax deducted	73,910.90		73,910.90	
	Subtotal credits	73,910.90		73,910.90	
48200	Total credits	73,910.90		73,910.90	
	Subtotal (Total payable minus Total credits)	11,491.99	CR	11,550.74	CR
	Change to tax payable (Final subtotal minus last subtotal)			58.75	CR
	Balance from this reassessment			58.75	CR
	Direct deposit			**58.75**	**CR**

Explanation of changes and other important information

We changed your return based on the information you gave us through our ReFILE service.

We changed your total federal non-refundable tax credits to $9,650 and your total Alberta non-refundable tax credits to $7,201.

Notice details

Social insurance number	XXX XX4 812
Tax year	2025

GUILHERME
PEREIRA DA SILVA ALVES
361 COPPERFIELD BLVD SE
CALGARY AB T2Z 4C8

Since you claimed an amount for medical expenses, you, your spouse or common-law partner or your dependant may be entitled to the disability tax credit. For more information, see Guide RC4064, Disability-Related Information, or go to **canada.ca/disability-credits-deductions**.

We calculated your RRSP deduction limit for 2026 based on 18% of your earned income for 2025, up to a maximum of $33,810. Refer to your RRSP deduction limit statement.

Your net capital loss for 2025 is $506. You can use this amount to reduce any taxable capital gains that you report in other years. For more information, see Guide T4037, Capital Gains.

As of the date of this notice, you have unused net capital losses from other years of $864. But, if you apply this amount to any tax year other than the current one, we may have to recalculate your unused balance. This is because different years have different capital gains rates. You can use your unused net capital losses to reduce taxable capital gains that you have reported. For more information, see Guide T4037, Capital Gains.

Your Canada training credit limit for next year is $1,000.00. This credit will expire at the end of the year you turn 65 or the year of death.

We will deposit your refund into your bank account.

If you have questions about your reassessment or need help reading your notice, please go to **canada.ca/cra-notices-letters**.

Notice details

Social insurance number	XXX XX4 812
Tax year	2025

GUILHERME
PEREIRA DA SILVA ALVES
361 COPPERFIELD BLVD SE
CALGARY AB T2Z 4C8

RRSP deduction limit and available contribution room statement

References to RRSP contributions also include contributions to your pooled registered pension plan (PRPP) and to your and your spouse's or common-law partner's specified pension plan (SPP). For more information, go to **canada.ca/rrsp** or see Guide T4040, RRSPs and Other Registered Plans for Retirement.

Your unused RRSP deduction room at the end of 2025

Description	$ Amount
RRSP deduction limit for 2025	72,437
Minus: Employer's PRPP contributions for 2025	0
Minus: Allowable RRSP contributions deducted for 2025	0
Equals: Your unused RRSP deduction room at the end of 2025	72,437

Your additional RRSP deduction limit earned in 2025

Description	$ Amount
18% of 2025 earned income, up to a maximum of $33,810	33,810
Minus: 2025 pension adjustment (PA)	0
Minus: 2025 prescribed amount for connected persons	0
Equals: Additional RRSP deduction limit you earned in 2025 (if negative, will be "0")	33,810

Your 2026 RRSP deduction limit

Description	$ Amount
Unused RRSP deduction room at the end of 2025	72,437
Plus: Additional RRSP deduction limit earned in 2025	33,810
Minus: 2026 net past service pension adjustment (PSPA)	0
Plus: 2026 pension adjustment reversal (PAR)	0
Equals: RRSP deduction limit for 2026	**106,247**
Minus: Unused RRSP contributions previously reported and available to deduct for 2026	0
Your available RRSP contribution room for 2026	**106,247**

Note: If your available RRSP contribution room is a negative amount (shown in brackets), you have no contribution room for 2026. You may have over contributed to your RRSP and have to pay a 1% monthly tax on any excess contributions. If you have, you must file a T1-OVP, Individual Tax Return for RRSP, PRPP and SPP Excess Contributions, and pay the taxes owing.

More information

If you need more information about your income tax and benefit return, go to **canada.ca/taxes**, go to My Account at **canada.ca/my-cra-account**, or call **1-800-959-8281**. For individuals living in the territories (area code 867), call **1-866-426-1527**.

If you move

Let us know your new address as soon as possible. For more information, go to **canada.ca/cra-change-address**.

If you have new information and want to change your return:

- go to **canada.ca/change-tax-return** for faster service; or
- write to your tax centre, and include your social insurance number and any documents supporting the change. To find your tax centre, go to **canada.ca/cra-offices**.

If you want to register a formal dispute:

- go to **canada.ca/cra-complaints-disputes**; you have 90 days from the date of this notice to register your dispute.

Help for persons with hearing, speech, or visual impairments

You can get this notice in braille, large print, electronic text, or audio format. For more information, go to **canada.ca/cra-multiple-formats**.

If you use a teletypewriter, you can get tax information by calling **1-800-665-0354**.

My Account

Use My Account to see and manage your tax information online. Make changes to your return, check your RRSP information, set up direct deposit, and more. To register for My Account, go to **canada.ca/my-cra-account**.

Did the Canada Revenue Agency really contact you?

Scams disguised as messages from the CRA often imitate our services and programs to get access to your personal information and may happen by phone, email, text or instant messages. We do contact Canadians, and it is okay to ask questions if you are not sure it is us. To learn what to expect if we contact you, visit **canada.ca/be-scam-smart**.

CO.	FILE	DEPT.	CLOCK	VCHR. NO.	087
F8T	939982	003100		0000220028	1

Earnings Statement

GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Period Beginning: 05/16/2026
Period Ending: 05/31/2026
Pay Date: 05/29/2026

GUILHERME PEREIRA DA SILVA ALVES
361 COPPERFIELD BOULEVARD SE
CALGARY AB T2Z 4C8

Exemptions/Allowances:
Federal: $16452

Earnings	rate	hours	this period	year to date
Regular	10183.34	86.67	10,183.34	36,190.02
CELLPHONEAL			20.00	80.00
INT ALL			30.00	120.00
FLEXBEN STP				162.18
Gross Pay			**$10,233.34**	36,552.20

Deductions	Statutory		
	Federal Tax	-3,197.78	11,079.13
	EI	-166.80	595.80
	CPP	-600.21	2,140.16
	Net Pay	**$6,268.55**	
	Primary Deposit	-6,268.55	22,737.11
	Net Cheque	**$0.00**	

Important Notes

EFFECTIVE THIS PAY PERIOD YOUR DIRECT DEPOSIT INFORMATION HAS BEEN MODIFIED. PLEASE REVIEW.

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GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Advice number: **00000220028**
Pay date: 05/29/2026

Deposited to the account of / Dépôt effectué au compte de	account number / n° de compte	bank/transit No. / n° succ.	amount / montant
GUILHERME PEREIRA DA SILVA ALVES	xxx9284	xxx xxxxx	$6,268.55

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CECI N'EST PAS UN CHÈQUE

BANK OF MONTREAL
BANQUE DE MONTRÉAL
FIRST CANADIAN PLACE
TORONTO, ONTARIO

NON NÉGOCIABLE
NON-NEGOTIABLE

CO.	FILE	DEPT.	CLOCK	VCHR. NO.	087
F8T	939982	003100		0000200028	1

Earnings Statement

GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Period Beginning: 05/01/2026
Period Ending: 05/15/2026
Pay Date: 05/15/2026

GUILHERME PEREIRA DA SILVA ALVES
361 COPPERFIELD BOULEVARD SE
CALGARY AB T2Z 4C8

Exemptions/Allowances:
Federal: $16452

Earnings	rate	hours	this period	year to date
Regular	10183.34	86.67	10,183.34	26,006.68
CELLPHONEAL			20.00	60.00
FLEXBEN STP			162.18	162.18
INT ALL			30.00	90.00
Gross Pay			**$10,395.52**	26,318.86

Deductions	Statutory		
	Federal Tax	-3,267.39	7,881.35
	EI	-169.45	429.00
	CPP	-609.86	1,539.95
	Net Pay	**$6,348.82**	
	Primary Deposit	-6,348.82	16,468.56
	Net Cheque	**$0.00**	

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GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Advice number: **00000200028**
Pay date: 05/15/2026

Deposited to the account of / Dépôt effectué au compte de	account number / n° de compte	bank/transit No. / n° succ.	amount / montant
GUILHERME PEREIRA DA SILVA ALVES	xxx3286	xxx xxxxx	$6,348.82

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CO.	FILE	DEPT.	CLOCK	VCHR. NO.	087
F8T	939982	003100		0000180028	1

Earnings Statement

GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Period Beginning: 04/16/2026
Period Ending: 04/30/2026
Pay Date: 04/30/2026

GUILHERME PEREIRA DA SILVA ALVES
361 COPPERFIELD BOULEVARD SE
CALGARY AB T2Z 4C8

Exemptions/Allowances:
Federal: $16452

Earnings	rate	hours	this period	year to date
Regular	10183.34	86.67	10,183.34	15,823.34
CELLPHONEAL			20.00	40.00
INT ALL			30.00	60.00
Gross Pay			**$10,233.34**	15,923.34

Deductions	Statutory		
	Federal Tax	-3,197.78	4,613.96
	EI	-166.80	259.55
	CPP	-600.21	930.09
	Net Pay	**$6,268.55**	
	Primary Deposit	-6,268.55	10,119.74
	Net Cheque	**$0.00**	

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GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Advice number: **00000180028**
Pay date: 04/30/2026

Deposited to the account of / Dépôt effectué au compte de	account number / n° de compte	bank/transit No. / n° succ.	amount / montant
GUILHERME PEREIRA DA SILVA ALVES	xxx3286	xxx xxxxx	$6,268.55

THIS IS NOT A CHEQUE
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BANK OF MONTREAL
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NON-NEGOTIABLE

CO.	FILE	DEPT.	CLOCK	VCHR. NO.	087
F8T	939982	003100		0000160028	1

Earnings Statement

GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Period Beginning: 04/01/2026
Period Ending: 04/15/2026
Pay Date: 04/15/2026

GUILHERME PEREIRA DA SILVA ALVES
361 COPPERFIELD BOULEVARD SE
CALGARY AB T2Z 4C8

Exemptions/Allowances:
Federal: $16452
Provincial: $12989

Earnings	rate	hours	this period	year to date
Regular	10183.34	48.00	5,640.00	5,640.00
CELLPHONEAL			20.00	20.00
INT ALL			30.00	30.00
Gross Pay			**$5,690.00**	5,690.00

Deductions	Statutory		
	Federal Tax	-1,416.18	1,416.18
	EI	-92.75	92.75
	CPP	-329.88	329.88
	Net Pay	**$3,851.19**	
	Primary Deposit	-3,851.19	3,851.19
	Net Cheque	**$0.00**	

Important Notes

EFFECTIVE THIS PAY PERIOD YOUR DIRECT DEPOSIT INFORMATION HAS BEEN MODIFIED. PLEASE REVIEW.

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GUSTO CANADA ULC
525 20TH STREET SAN FRANCISCO ON A0A 0A0

Advice number: **00000160028**
Pay date: 04/15/2026

Deposited to the account of / Dépôt effectué au compte de	account number / n° de compte	bank/transit No. / n° succ.	amount / montant
GUILHERME PEREIRA DA SILVA ALVES	xxx3286	xxx xxxxx	$3,851.19

THIS IS NOT A CHEQUE
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TORONTO, ONTARIO

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Earnings Statement

Pay period: Jun 1, 2026 - Jun 15, 2026 Pay Day: Jun 15, 2026

Company

Gusto Canada ULC

Employee

Guilherme Pereira Da Silva Alves
--XXX
361 Copperfield Boulevard Southeast
Calgary, AB T2Z 4C8

Employee Gross Earnings

Description	Rate	Hours	Current	Year To Date
Canada Cell Phone Reimbursement			$20.00	$100.00
Canada Internet Reimbursement			$30.00	$150.00
Regular Hours	$117.50	86.67	$10,183.34	$46,373.36
Flexible Benefits Stipend				$162.18
Totals			**$10,233.34**	**$46,785.54**

Employee Taxes Withheld

Employee Tax	Current	Year To Date
Pension Plan Tax	$600.21	$2,740.37
Employment Insurance Tax	$166.80	$762.60
Income Tax	$3,044.50	$14,123.63

Employer Taxes

Company Tax	Current	Year To Date
Pension Plan Tax	$600.21	$2,740.37
Employment Insurance Tax	$233.52	$1,067.64

Summary

Description	Current	Year To Date
Gross Earnings	$10,233.34	$46,785.54
Pre-Tax Deductions	$0.00	$0.00
Taxes	$3,811.51	$17,626.60
Post-Tax Deductions	$0.00	$0.00
Net Pay	$6,421.83	$29,158.94

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Earnings Statement

Pay period: Jun 16, 2026 - Jun 30, 2026 Pay Day: Jun 30, 2026

Company

Gusto Canada ULC

Employee

Guilherme Pereira Da Silva Alves
--XXX
361 Copperfield Boulevard Southeast
Calgary, AB T2Z 4C8

Employee Gross Earnings

Description	Rate	Hours	Current	Year To Date
Regular Hours	$117.50	86.67	$10,183.34	$56,556.70
Canada Cell Phone Reimbursement			$20.00	$120.00
Canada Internet Reimbursement			$30.00	$180.00
Flexible Benefits Stipend			$576.42	$738.60
Totals			**$10,809.76**	**$57,595.30**

Employee Taxes Withheld

Employee Tax	Current	Year To Date
Employment Insurance Tax	$176.20	$938.80
Income Tax	$3,289.42	$17,413.05
Pension Plan Tax	$634.51	$3,374.88

Employer Taxes

Company Tax	Current	Year To Date
Employment Insurance Tax	$246.67	$1,314.31
Pension Plan Tax	$634.51	$3,374.88

Summary

Description	Current	Year To Date
Gross Earnings	$10,809.76	$57,595.30
Pre-Tax Deductions	$0.00	$0.00
Taxes	$4,100.13	$21,726.73
Post-Tax Deductions	$0.00	$0.00
Net Pay	$6,709.63	$35,868.57

BANCO CENTRAL DO BRASIL

Currency Converter

Quotation date 23/09/2026

Value

154.000,00

Convert from

Real (BRL)

To

United States Dollar (USD)

Conversion result

Conversion from: Real/BRL (790)
Amount to convert: 154,000.00

To: United States Dollar/USD (220)
Conversion result: 29,952.9311

Exchange rate used: 23/09/2026
Rate:
1 Real/BRL (790) = 0.1944996 US Dollar/USD (220)
1 US Dollar/USD (220) = 5.1414 Real/BRL (790)

- The calculation performed is for informational purposes only and does not replace the provisions of Brazilian exchange regulations for specific conversion cases.
- Conversions are available for dates entered from 01/02/1999 onwards.
- For non-working days, the exchange rate of the immediately preceding working day is assumed.
- The Central Bank assumes no responsibility for the non-simultaneous or lack of information provided, as well as for any errors in currency parities, or any other error, except for the parity relative to the United States dollar in relation to the Real. Likewise, it is not responsible for delays or unavailability of telecommunications services, interruptions, failures, or inaccuracies in the provision of services or information. It also assumes no responsibility for any loss or damage arising from such interruptions, delays, failures, or imperfections, as well as for the improper use of the information contained in the transaction.

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<http://pt-br.facebook.com/bancocentraldobrasil/>
<http://www.bcb.gov.br/?id=b34175749@N03/>

Acesso à informação

Política monetária

Estabilidade financeira

Estatísticas

Cédulas e moedas

Publicações e pesquisa

To guarantee price stability, to safeguard a sound and efficient financial system, and to promote the economic well-being of society.

Customer service: 145 (local call cost)

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BANCO CENTRAL DO BRASIL

Currency Converter

Quotation date 23/09/2026

Value

106.000,00

Convert from

Canadian dollar (CAD)

To

United States Dollar (USD)

Conversion result

Conversion from: Canadian Dollar/CAD (165)
Amount to convert: 106,000.00

To: United States Dollar/USD (220)
Conversion result: 75,171.9736

Exchange rate used: 23/09/2026
Rate:
1 Canadian Dollar/CAD (165) = 0.7091696 US Dollar/USD (220)
1 US Dollar/USD (220) = 1.4101 Canadian Dollar/CAD (165)

- The calculation performed is for informational purposes only and does not replace the provisions of Brazilian exchange regulations for specific conversion cases.
- Conversions are available for dates entered from 01/02/1999 onwards.
- For non-working days, the exchange rate of the immediately preceding working day is assumed.
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BANCO CENTRAL DO BRASIL

Currency Converter

Quotation date 23/09/2026

Value

244.400,16

Convert from

Canadian dollar (CAD)

To

United States Dollar (USD)

Conversion result

Conversion from: Canadian Dollar/CAD (165)
Amount to convert: 244,400.16

To: United States Dollar/USD (220)
Conversion result: 173.321,1545

Exchange rate used: 23/09/2026
Rate:
1 Canadian Dollar/CAD (165) = 0.7091696 US Dollar/USD (220)
1 US Dollar/USD (220) = 1.4101 Canadian Dollar/CAD (165)

- The calculation performed is for informational purposes only and does not replace the provisions of Brazilian exchange regulations for specific conversion cases.
- Conversions are available for dates entered from 01/02/1999 onwards.
- For non-working days, the exchange rate of the immediately preceding working day is assumed.
- The Central Bank assumes no responsibility for the non-simultaneous or lack of information provided, as well as for any errors in currency parities, or any other error, except for the parity relative to the United States dollar in relation to the Real. Likewise, it is not responsible for delays or unavailability of telecommunications services, interruptions, failures, or inaccuracies in the provision of services or information. It also assumes no responsibility for any loss or damage arising from such interruptions, delays, failures, or imperfections, as well as for the improper use of the information contained in the transaction.

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Exhibit B.V. Membership in professional association(s)

Association for Computing Machinery

This is to certify that

Guilherme Pereira Da Silva Alves

having fulfilled the requirements for Professional Membership
has been admitted as a member of
the Association for Computing Machinery

Member Since

December 2024



Yannis Ioannidis, President

Association for Computing Machinery
Advancing Computing as a Science & Profession

Bylaws of the Association for Computing Machinery

Bylaw I. Principal Offices and Resident Agent
Bylaw 2. Membership, Dues and Privileges
Bylaw 3. Nominations and Elections
Bylaw 4. Publications Board
Bylaw 5. Chapters
Bylaw 6. Special Interest Groups
Bylaw 7. Committees and Boards
Bylaw 8. Financial Safeguards
Bylaw 9. The Budget
Bylaw 10. Questions of Importance
Bylaw 11. Meetings
Bylaw 12. Ballots
Bylaw 13. Suspension of Bylaws
Bylaw 14. Representatives to Other Organizations
Bylaw 15. ACM Code of Ethics and Professional Conduct
Bylaw 16. Indemnification

Bylaw I. Principal Offices and Resident Agent

Section 1.Delaware Office.

The principal office in the State of Delaware of the Association for Computing Machinery, Inc., sometimes referred to as the Association or ACM, is located at 100 West Tenth Street in the City of Wilmington, County of New Castle. The name and address of the resident agent is the Corporation Trust Company, 100 West Tenth Street, Wilmington, Delaware.

Section 2. Business Office.

The Council shall determine the principal office of the Association for the conducting of Association business.

Section 3. Executive Director and Chief Executive Officer.

There shall be an Executive Director and Chief Executive Officer who shall be a paid employee of the Association. The Executive Director and Chief Executive Officer shall have charge of the principal office of the Association, and shall be responsible for the general administration of the affairs of the Association in accordance with the policies set by the Council and Officers of the Association.

The Executive Director and Chief Executive Officer shall be appointed by the Executive Committee with the consent of the Council. The terms and conditions of his/her employment shall be fixed by the Executive Committee.

The Executive Director and Chief Executive Officer shall work under the direction of the Executive Committee. The Executive Director and Chief Executive Officer shall be an ex-officio member of the Council and Executive Committee without vote.
The Executive Director and Chief Executive Officer or his/her designee shall be an ex-officio member of all other committees without vote.

Bylaw 2. Membership, Dues and Privileges

Section 1. Professional Members.

A candidate for Professional Membership must have a bachelor's degree or equivalent level of education from an accredited educational institution or at least two full-time years of experience in the arts and sciences of information processing or associated fields. Professional Members must subscribe to the purposes of ACM. Professional Members shall have voting rights and the right to hold office in the Association. Each Professional Member shall pay annual dues and receive such publications of the Association as may be determined by an affirmative vote of at least two-thirds of all the members of the Council.

There shall be a Fellow designation for Professional Members who have distinguished themselves by outstanding technical and professional achievements in the field of information technology. Council shall establish procedures for nomination, selection, and approval of ACM Fellow candidates.

There shall be a Senior Member designation for Members who have demonstrated performance that sets them apart from their peers. Procedures for selection and approval of Senior Member candidates shall be established by Council.

There shall be a Distinguished Member designation for Members who have achieved a significant accomplishment or have made a significant impact in the field of computing, computer science, and/or information technology. Procedures for selection and approval of Distinguished Member candidates shall be established by Council.

Section 2. Institutional Members.

Each institutional member shall pay annual dues and receive such publications of the Association as may be determined by an affirmative vote of at least two-thirds of all the members of the Council. The institutional member shall nominate one person who will be a Member.

Section 3. Student Members.

A candidate for student membership must be registered full time in an accredited four or two year educational institution, High School or equivalent. Student members shall not have voting rights or the right to hold office in the Association except as specified in the Bylaws. Student members must subscribe to the purposes of ACM. Each student member shall pay annual dues and receive such publications of the Association as may be determined by an affirmative vote of at least two-thirds of all members of the Council.

Section 4. Affiliate Members.

Each affiliate member shall pay annual dues to an ACM unit (Special Interest Group (SIG), Chapter, etc) and receive such publications and privileges as designated by the unit and additional privileges of the Association as may be determined by an affirmative vote of two-thirds of all the members of the Council. Affiliate members must subscribe to the purposes of the ACM unit in which they are members. Affiliate members shall not have voting rights or the right to hold office in the Association except as specified in the Bylaws. Affiliate members shall have voting rights in the ACM unit in which they are members as specified in the Bylaws of the unit.

Section 5. When Payable.

The term of membership is on an annual basis commencing with the first of the month in which the first annual dues payment is made. Cost of renewal shall be determined by the dues rate in effect at the beginning of the member's membership year. If the dues of any Member, institutional member, student member or affiliate member remain unpaid after 15 days from the date when payable, the membership of such person or institution will lapse. Such person or institution may, however, be reinstated within one year upon the payment of arrears of dues.

[**top**]

Bylaw 3. Nominations and Elections

Section 1. Nominating Committee.

The Nominating Committee shall be a standing committee consisting of five Members of the Association serving two-year terms beginning January 1 of odd-numbered years. Nominating Committee members shall be appointed by the Executive Committee and confirmed by Council. The Nominating Committee shall, as soon as possible after January 1 of odd-numbered years, elect a chair from among its members for a two-year term. No member of the Nominating Committee may be a candidate for any office for which that Nominating Committee is responsible for nominating candidates. The Nominating Committee will work to achieve balance across several dimensions important to ACM: gender, age, race, ethnicity, disability, geography, and industry/academia.

Unless qualified by "SGB," use of the term "Nominating Committee" in these Bylaws shall refer to the committee described in the previous paragraph.

Section 2. Elections Committee.

The Elections Committee shall be a standing committee consisting of three Members of the Association each chosen for a three-year term. The terms shall be staggered so that each year one new member shall replace a retiring member of the Committee. The appointment of a Member to the Elections Committee shall be made by the President not later than the last Executive Committee meeting before July 1 each year, and confirmed by the Executive Committee. Members' terms shall begin July 1. As soon as possible after July 1 each year, the

Elections Committee shall choose one of its members to be Chair for the new term, effective immediately. The Elections Committee shall be responsible for coordinating and supervising the conduct of elections.

Section 3. Nominations.

The Nominating Committee shall, on or before November 5 of each odd-numbered year, nominate Members for officer and Member-at-Large positions to be filled in the forthcoming elections. The Nominating Committee shall make every effort to insure nominations on a worldwide basis. There shall be at least two nominees for each office to be filled in the forthcoming election. For Members-at-Large, the Committee shall propose at least two more nominees than there are positions to be filled, and at most twice as many nominees as there are positions to be filled.

Section 4. Members-at-Large.

Each Member shall be allowed to vote for as many of the candidates as there are vacancies. The vacancies shall then be filled by taking first the candidate receiving the largest number of votes, second, the candidate receiving the next largest number of votes, and so on, until all the vacancies are filled. In the event that there are vacancies for both 4-year and 2-year terms, the vacancies for 4-year terms shall be filled first.

Section 5. SGB Nominating Committee.

The Past Chair of the SGB will serve as the Chair of the SGB Nominating Committee and will nominate two additional ACM Members to serve on the SGB Nominating Committee for approval by the SGB. All members of the Nominating Committee will serve for two-year terms expiring June 30 of even-numbered years. SGB consideration of the nominees will take place as soon as possible after July 1 of even numbered years.

The SGB Nominating Committee will nominate at least two persons for the office of SGB Chair and at least one more candidate than the number of other SGB Representative positions to be filled in each election. No member of the SGB Nominating Committee may be a candidate for any office for which that SGB Nominating Committee is responsible for nominating candidates. All candidates and all persons elected to these positions must be ACM Members and current members of at least one SIG.

The election process for the SGB representatives is specified in Bylaw 6, Section 3.

Section 6. Notice to Members, Ballots.

The Nominating Committee shall publish a notice of nominees for officer and Member-at-Large positions to all the Members on or before December 31 of each odd-numbered year. Candidates for these elected offices of the Association may also be nominated before January 31 of each even-numbered year by a petition of at least one percent of the Members of the Association, by notice to the Elections Committee accompanied by a written statement from the nominee that the nominee is willing to stand for election.

The SGB Nominating Committee annually will submit its report to the SGB on or before February 1. Candidates for SGB Representatives may also be nominated by a petition of at least two SGB members, by notice to the Elections Committee or its designee, accompanied by a written statement from the nominee that the nominee is willing to stand for election. The report of the SGB Nominating Committee will include the final date by which petitions must be received. At least 30 days must be allowed for the petition process. If the election of the SGB Representatives is to be conducted at an actual meeting of the SGB, floor nominations will be permitted as long as the petition criteria stated above have been meet. If the election of the SGB Representatives is to be conducted via mail, the ballots shall be mailed not later than April 25.

No person may be a candidate for more than one position on Council in an election. The candidates for each office will be the nominees of the Nominating Committee or as otherwise prescribed in the Bylaws plus all petitioners for that office who satisfactorily complete the petition process requirements. No candidate shall be concurrently a member of the Elections Committee. The ballots for officer and Member-at-Large elections shall be mailed not later than April 25.

Section 7. Withdrawal of a Candidate Before an Election.

If a candidate for office should withdraw or become ineligible or unavailable before the final date for nomination by petition, resulting in fewer than the minimum number of candidates for this office, then the Nominating Committee or SGB Nominating Committee as appropriate shall provide additional nominees to ensure the minimum number of candidates, even if this delays the balloting process.

Section 8. Withdrawal of a Candidate During an Election.

If a candidate for office should withdraw or become ineligible or unavailable after the final date for receipt of nominating petitions, but before the final date for return of ballots, the candidate shall be deemed to have withdrawn during the election.

If a candidate for office other than President, Vice-President, or Secretary/Treasurer withdraws during an election, the election shall continue. If a withdrawn candidate receives the largest number of votes, then if two or more candidates for this office remain, the remaining candidate receiving the largest number of votes shall be deemed the winner. If only one candidate remains, no winner shall be declared and the office shall be considered vacant and filled in accordance with the provisions of Article 7.

If a candidate for the office of the President, Vice-President, or Secretary/Treasurer withdraws during an election, one of the following actions is taken:

(a) Election not yet opened for voting: if fewer than two candidates for this office remain, the Nominating Committee shall provide additional names to ensure at least two candidates even if this delays the mailing and return of ballots as specified in Bylaw 12.

(b) Election already opened for voting: the election shall be declared null and void and a new election must be held.

Section 9. Policy and Procedures on Nominations and Elections.

There shall be a document called the "**Policy and Procedures on Nominations and Elections**" maintained by the Executive Committee with the advice of the Nominating Committee, the SGB Nominating Committee, the Elections Committee and the Executive Director and Chief Executive Officer. This document shall set forth, in one place, the relevant sections of the Constitution and Bylaws, the policy set by Council for nominations and elections, and the procedures for implementing this policy. All candidates will be bound by the policy and procedures set forth in this document.

Section 10. Council Elections.

The Executive Committee shall propose at least two candidates for each position that must be filled by a vote of Council, as provided elsewhere in these Constitution and Bylaws. Council shall be informed of the existence of any vacancy and the names of candidates at least thirty days in advance of the Council meeting in which the election to fill the vacancy is to be conducted.

Additional nominations can be made by any Council member with the support of one additional Council member. No Council member may participate in more than one such additional nomination for each vacancy.

Section 11. Limited Terms of Office.

All elected positions shall have a specified definite term. The expiration date of the term shall be specified at the time of election. An individual may be considered for election to a subsequent term. All elected volunteer positions shall be limited to two full consecutive terms in the same position. Exceptions to the two-term limit are possible for specific SIGs contingent upon approval of the SGB.

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Bylaw 4. Publications Board

Section 1. Authority.

The Publications Board shall be responsible for and have authority over all ACM subscription publications including proceedings, monographs, newsletters, and journals of record. The Publications Board Co-Chairs or their designee shall appoint Editors-in-Chief of ACM journals and magazines under the auspices of the Publications Board. The Board shall be subject to the approval of and instructions from the Council and the Executive Committee.

Section 2. Membership and Tenure.

The Publications Board shall comprise the Chair, the SGB Publications Advisor (as per Bylaw 6, Section 4), one additional member of Council, and other Members of the Association. The Publications Board chair shall be appointed by the President, with the appointment subject to Council confirmation, for a three-year term.

Terms of appointment of members of the Publications Board shall be staggered so that no more than one-half of such members shall retire from the Board in any one year.

Section 3. Representation on Council.

The Publications Board Chair shall be a voting member of Council.

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Bylaw 5. Chapters

Section 1. Purpose of Bylaw.

This bylaw defines the purposes of ACM chapters, the rules for forming and dissolving them, and the authority of the the Executive Committee in managing them.

Section 2. Purposes of Chapters.

A chapter is a unit of ACM formed to serve a given virtual or geographic community. Those chapters that serve students at colleges and universities are called "student chapters." Others are called “professional chapters.” Chapters may have a particular focus. All chapters will be organized and operated exclusively for educational and scientific purposes.

Section 3. Formation.

Three or more persons in a given virtual or geographic community, who are members of ACM and are willing to become officers of the chapter, may petition the ACM Chief Operating Officer for a charter as an ACM chapter in that community. A petition for a charter as a student chapter must, in addition, contain the name of an ACM Member who is willing to serve as its sponsor.

The ACM Chief Operating Officer shall accept or reject the petitions based on chapter chartering policies set forth in a chapter viability policy established by the ACM Chief Operating Officer and approved by the Executive Committee. Acceptance of a petition for charter of a special interest chapter shall require the concurrence of the SGB or other units as appropriate. The ACM Chief Operating Officer shall inform the petitioners in writing of its decision.

Section 4. Management.

Each chapter is governed by a set of bylaws that defines a minimum of three officers of that chapter, and that contains minimal provisions established by the ACM Chief Operating Officer and approved by the Executive Committee. The

bylaws of each chapter, and all amendments to them, must receive approval by the ACM Chief Operating Officer. These approvals must be obtained before any amendment may be distributed for a vote to the members of the chapters.

The officers of a chapter will be elected and vacant offices filled as provided in its bylaws. All officers in student chapters must be ACM members. All officers in professional chapters must be ACM Members.

The sponsor of each student chapter will be appointed as provided in its bylaws. All sponsors of student chapters must be ACM Members.

Section 5. Membership.

Membership in a chapter shall be open to all ACM members and all ACM special interest group members. Such members shall be entitled to vote in chapter affairs. Chapter bylaws may grant affiliate membership to others who are not otherwise ACM members, and may extend chapter voting privileges to those affiliate members.

Section 6. Finance.

The responsibility for collecting, holding and disbursing funds is delegated to all chapters under the terms of a Financial Accountability Policy established by the ACM Chief Operating Officer and approved by the Executive Committee. Each chapter must file an annual financial statement with ACM.

Should two or more chapters merge, all assets and liabilities become the responsibility of the surviving chapter. Should a chapter be dissolved, its assets and liabilities shall be transferred to ACM and shall be supervised by the ACM Finance Director; an exception may be granted by the ACM Chief Operating Officer when there is a conflicting school or government regulation.

Section 7. Viability.

Minimum acceptable levels of activity within chapters are specified in a viability policy established by the ACM Chief Operating Officer and approved by the Executive Committee. Each chapter is responsible for filing reports as required by ACM. These include an annual activity report on the state of the chapter during the last twelve months, an annual financial report as required by the Financial Accountability Policy, and the closing reports for conferences and symposia sponsored by the chapter.

Section 8. Authority.

In case of conflict, this Constitution and Bylaws, the policies set by Council, the policies set by the Executive Committee, and the policies set by the ACM Chief Operating Officer take precedence, in the order stated, over any provisions of chapter bylaws or internal policies.

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Bylaw 6. Special Interest Groups

Section 1. Purpose of Bylaw.

This Bylaw defines the purposes of Special Interest Groups (SIGs), which can have other designations as approved by the ACM Council; the rules for forming and dissolving them; and the authority of the SIG Governing Board (SGB) and the ACM Executive Committee (ACM EC) in managing them.

Section 2. Purposes of SIGs.

A SIG is a unit of the ACM formed by Members with the desire to pursue significant long-term activity in a technical specialty of interest to the Association. Each SIG must have a mission statement, approved by the SGB [SOR 3.1].

Section 3. SIG Governing Board.

The SGB is charged with forming SIGs, with managing them and setting policies for their management, and with recommending their dissolution, as provided in this Bylaw.

The SGB is comprised of the chief executive officer or designee of each regular SIG (defined by SGB policies). The SGB will elect a Chair no later than May 31 of each even-numbered year and an Executive Committee (SGB EC) with staggered terms no later than May 31 of each year. The terms of office are two years, ending June 30. Policies and procedures governing the election of the SGB Chair and the SGB EC and defining their authority and responsibilities, other than as prescribed in these Bylaws, will be established by SGB policies.

Except for actions specified in these Bylaws or SGB policies that explicitly require SGB approval, the SGB EC has full authority to act on behalf of the SGB between its meetings. The SGB EC is bound by the SGB's actions and the SGB may override any decision of the SGB EC.

The SGB will elect four representatives to the ACM Council for two-year terms ending June 30, with nominations as specified in Bylaw 3, Section 5. The SGB Chair will serve as one of these representatives, and also will serve on the ACM EC. The other three will be elected no later than May 31, one in each even-numbered year and two in each odd-numbered year.

The SGB will decide all matters by weighted voting, as follows: Each regular SIG is entitled to one vote, plus one vote for each one-thousand voting SIG members or fraction thereof. Voting SIG membership will be calculated each July 1 for SGB votes taken during that fiscal year. The SGB EC will review each SIG periodically and the SGB will formulate a Program Review Policy [SOR 6.0] for this purpose that specifies minimum acceptable levels of SIG activity.

One member of the SGB EC will be a Publications Advisor. This member also will be a member of the Publications Board (see Bylaw 4, Section 2), appointed by the SGB Chair with the advice and consent of the Chair of the ACM Publications Board.

Section 4. Formation and Consolidation.

A SIG is formed upon approval of a petition for that purpose, in accordance with SGB policies [SOR 7.1]. The status of a SIG is either transitional or regular, as defined by SGB policies [SOR 7.2].

Two or more SIGs may be consolidated, in accordance with SGB policies with approval of the SGB.

Section 5. Structure and Management.

Each SIG is governed by a set of bylaws or operating rules which defines the SIG's officers and executive committee and which contains minimal provisions agreed upon by the SGB and the ACM EC.

The chief executive officer of a transitional SIG is appointed by the ACM President with advice from the SGB Chair, for the lesser of two years or the duration of the SIG's transitional charter. This SIG officer appoints the other SIG officers, with the advice and consent of the SGB Chair. A SIG that elects its officers does so by plurality vote of the SIG members for terms beginning July 1 in odd-numbered years, unless otherwise provided for in the SIG’s bylaws. The terms of office for SIG officers are specified within the SIG’s bylaws. At the end of an initial term following an election, the SGB EC may exercise an option to extend the term of a SIG’s officers for an additional term. Execution of this option is subject to a Policy for Extending the Terms of SIG Officers. [PP&G 17.4.2.0].

All SIG officers, all members of SIG executive committees, and all candidates for these positions must be ACM Members, as well as members of the SIG.

In the absence of provisions in a SIG’s bylaws, the SGB Chair will appoint an ACM Member to the unexpired term of a vacant office in the SIG's executive committee.

The SGB EC will by majority vote settle ties occurring in any SIG election or SIG bylaw amendment ballot.

All SIG bylaws and all amendments thereto proposed by the SIG must be reviewed by the SGB EC, the ACM Constitution and Bylaws Committee, and the ACM Executive Director and Chief Executive Officer.

Bylaws of a transitional SIG may be amended by the SGB EC. The bylaws of a regular SIG may be amended by a vote of the SIG members as specified in the SIG's bylaws or by a majority vote of the ACM EC.

At the request of the SIG by referendum, the SGB may change the name or amend the mission statement of a regular SIG, with the approval of the ACM EC. Without a referendum, the SGB may by two-thirds vote change the name or amend the mission statement of a regular SIG, with the approval of the ACM EC.

Section 6. Membership, Dues, and Voting Privileges.

All members of a SIG must pay dues as determined by the SIG's executive committee. For all services for which fees are charged, SIGs will offer rates in accordance with the following relational formula:

Fees for individuals who are neither ACM Members nor SIG members must be greater than fees for SIG-only members, which must be greater than or equal to fees for ACM-only Members, which must be greater than or equal to fees for individuals who are both ACM Members and SIG members.

ACM Headquarters will conduct every SIG ballot and referendum, following procedures approved by the SGB and the ACM EC.

Section 7. Finance.

The responsibility for collecting, holding, and disbursing funds is delegated to all SIGs under the terms of a Financial Accountability Policy [PP&G 17.7.1.0 and 17.7.2.0]. Should there be disagreement on the interpretation of such a policy, the ACM EC interpretation will prevail unless changed by the ACM Council.

All SIG assets are the property of the ACM. Should a SIG be dissolved, the SGB EC will supervise the distribution of its assets.

The SIGs collectively will be financially self-supporting in accordance with the Financial Accountability Policy. SIG collective fund balances, beyond any required reserves [SOR 8.4], may be used for non-SIG ACM activities only with the approval of the SGB or of two-thirds of all members of the ACM Council.

Section 8. Reports and Records.

The chief executive officer of each SIG is responsible for filing reports about the SIG as required by the SGB EC. These reports include:

(a) An annual report on the state and activities of the SIG during the previous year;

(b) All reports required by the Financial Accountability Policy referred to in Section 7; and

(c) Closing reports on technical meetings sponsored or cosponsored by the SIG, as required by ACM policies. ACM Headquarters will oversee the maintenance of all SIG membership records.

Section 9. Removal of Officers.

For just cause by two-thirds vote, the SGB EC may remove specific officers or members of a transitional SIG's executive committee. For just cause by two-thirds vote, the ACM EC may remove specific officers or members of a regular SIG's executive committee. If the ACM EC removes all the officers of a regular SIG, that SIG will automatically return to transitional status with a two-year charter.

Grounds for removing officers include, but are not limited to: failure to comply with the ACM Constitution and Bylaws, with the SIG's bylaws, with the directives of the ACM Council, ACM EC, or SGB, or with the ACM policies; failure to adequately carry out the prescribed duties of office; or mismanagement.

During any official deliberations on a proposal to remove from office, the affected individuals have the right to participate or to send witnesses. Should they fail to exercise this right, votes may be taken in their absence.

Section 10. External Relationships.

A SIG must have prior approval to establish an obligatory relationship with any group or organization outside the ACM. A relationship is "obligatory" if it commits ACM's services, assets, or name. Special relationships--those for which the ACM has no pro forma approval procedure--must be approved by the SGB and the ACM EC. The proposal must specify the nature and duration of the ACM's obligations. The ACM Council must be notified of all special relationships approved [PP&G 8.7.4.0].

Section 11. Dissolution.

A SIG may be dissolved only by the ACM Council, and may be returned to transitional status only by the ACM Council or by the removal of its entire executive committee by the ACM EC. If two-thirds of all members of the SIG Governing Board recommend such action, an affirmative majority vote of Council suffices; otherwise an affirmative two-thirds vote of the entire Council is required. A transitional SIG may be dissolved at any time by a vote of two-thirds of all members of the SGB or by a majority vote of the Council. Any proposal to dissolve a SIG must include a reasonable plan for accommodating unfulfilled commitments to the SIG's members.

The reasons for considering the dissolution of a SIG include, but are not limited to: the majority recommendation of the SIG's executive committee; failure to maintain sufficient activity or member support; and failure to comply with bylaws and ACM policies over an extended period.

At least sixty days prior to formal action on a SIG dissolution proposal , the SGB Chair will publish notice of the proposed action to all ACM members. If one percent of ACM Members, or five percent of the voting members of the subject SIG, challenge the proposal, the SGB EC will extend transitional status for six months to allow the challengers an opportunity to undertake a revitalization plan.

During any official deliberations on a proposed dissolution action, the subject SIG has the right to have a representative participate. If the SIG fails to exercise this right, votes may be taken in the absence of a representative.

Section 12. Newsletters.

ACM authorizes the publication of SIG newsletters. The SIG organization and newsletter names are listed in Appendix A of the ACM Policy and Procedures Guidelines Manual. The annual subscription cost for each SIG newsletter is included in the SIG member dues.

Section 13. Authority.

In case of conflict, this Constitution and Bylaws, the policies set by the ACM Council, the policies set by the ACM EC, and the policies set by the SGB take precedence (in the order stated) over any provisions of a SIG's bylaws or internal policies.

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Bylaw 7. Committees, Boards, and Councils

Section 1. Authority, Structure, Tenure and Membership.

There shall be two classes of committees: Standing Committees shall be established by the Council and have a continuing long-term purpose. Ad hoc Committees may be established by the Council or the President with a short-term purpose and are to be dissolved when their duties have been performed. Standing or Ad hoc Committees may be established jointly with other organizations. All Committees shall be subject to instructions from the Executive Committee and the Council and shall make recommendations to them.

Committee Chairs shall report administratively to the Council, to the Executive Committee, or to a Board Chair, as determined by the Executive Committee. The Executive Committee shall oversee the activities of all committees and boards and shall report to the Council on the extent to which each committee and board has discharged its responsibilities. Since the areas of responsibility of some committees may overlap, it is the intention of these Bylaws that the chairs of such committees and their respective board chair communicate and cooperate with each other, in the best interests of ACM.

The ACM Council may establish Councils with a regional or other particular focus. The current Councils are ACM China; ACM Europe; ACM India; Diversity, Equity, and Inclusion; and Technology Policy. The Chairs of ACM Europe and ACM India are elected by their respective regional membership. The Chairs of the other Councils are appointed by the President. The composition of the Councils is as specified in their charters or Articles of Incorporation as appropriate.

Except as otherwise provided in this Constitution and Bylaws, a) each board chair shall be appointed by the President; and b) the composition of each board shall be as approved by the Executive Committee. Each board chair shall have line management responsibility for the committees assigned to the board. Except as otherwise provided in this Constitution and Bylaws, a) each board member and chair of committees within a board shall be appointed by the relevant board chair with the advice and consent of the President; b) the term of each board member and committee chair shall be until terminated by the President, or until a new President takes office, whichever is sooner; and c) resignations of board members and committee chairs will be automatically effective when a new President takes office, but board members and committee chairs will continue until a successor is appointed. In case of a vacancy on a Board or Committee, it shall be filled in the same manner as for the original appointment. Except in the case of a) the Nominating Committee and the Elections Committee; b) committees established jointly with other organizations; or c) committees where the members have been designated by the President, Council or the Executive Committee; the committee chair, subject to the approval of the President, may

appoint the members of the committee, designate subcommittees and appoint their chair and members. The President may delegate the approval authority. The committee chair shall determine the term of office of subcommittee members. For each committee established jointly with other organizations, the Executive Committee shall approve the manner in which its chair, its members, any subcommittees, and the terms of office of individuals serving on the committee or subcommittees, are determined.

All appointed volunteer positions shall have a specified definite term. The expiration date of the term shall be specified at the time of appointment. Terms shall not exceed three years, except as otherwise provided in the Constitution, Bylaws, or Policy and Procedures Guidelines. An individual may be considered for appointment to a subsequent term. It is recommended that appointment of an individual to volunteer positions within ACM shall be in general limited to two full consecutive terms in the same position. Appointment to a third or subsequent term should be limited to situations where such appointment is believed to be in the best interests of the Association and shall require the approval of the ACM Executive Committee.

Each committee chair and board chair shall submit a written report annually to the Council, in a manner determined by the Executive Committee. Board reports shall incorporate the reports of the committees grouped within them. The chairs shall be notified by the Secretary/Treasurer as to the exact date on which the reports are due.

Except as otherwise provided in this Constitution and Bylaws, a) the development and approval of policies relevant to the operations and activities of ACM’s Boards, individually and collectively, is delegated to the ACM Executive Committee; and b) the development and approval of procedures required to implement policies relevant to the operation and activities of ACM’s Boards, individually and collectively, is delegated to the respective Boards affected. Nothing in the above delegations of authority shall be construed to mean that Council has delegated any authority or responsibility specifically assigned to Council by the Constitution and Bylaws.

Except in the case of a committee established jointly with other organizations, all funds and other assets held by any committee or board is the property of ACM. For committees established jointly with other organizations, the Executive Committee shall, subject to instructions from Council, approve rules governing ACM's ownership of committee funds and other assets, and ACM's rights to such funds and assets upon dissolution of ACM's relationship with the committee.

A list of committees, and board and committee chairs shall be published in a timely manner on the Association’s public webpage. Changes in individuals who chair boards, committees and subcommittees shall be published as soon as possible on the Association’s public webpage. The President shall, at each meeting, notify the Council of new board and committee chairs.

Section 2. Boards.

The Education Board shall be responsible for the educational activities of ACM, including accreditation and curricula.

The Practitioner Board shall be responsible for developing programs that support the professional needs of ACM members.

The Chairs of the Education Board and Practitioner Board shall be non-voting ex-officio members of Council.

The Digital Library Board shall be responsible for the oversight of the Digital Library and supporting technology platforms. The Digital Library Chair will be an ex-officio non-voting member of Council and appointed by the President subject to Council confirmation.

The SIG Governing Board and the Publications Board are described in Bylaw 6 and Bylaw 4, respectively.

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Bylaw 8. Financial Safeguards

Section I. Audit.

The ACM Audit Committee shall appoint a certified public accountant to audit annually the books and accounts of the Association.

Section 2. Bonds.

The Secretary/Treasurer, the Executive Director and Chief Executive Officer, the chief full-time paid exempt finance and accounting employee, and an additional full-time paid exempt employee of the Association to be designated by the Executive Director and Chief Executive Officer, shall give bond, with sufficient surety or sureties conditioned for the faithful performance of their duties, in such amount as the Council may determine. The cost of such bond shall be borne by the Association.

Section 3. Withdrawal of Funds of Deposit.

Checks and withdrawal slips executed in the name of the Association may be drawn over the signature of the Secretary/Treasurer alone. The Secretary/Treasurer may delegate these authorities as follows:

(a) To the Executive Director and Chief Executive Officer alone and/or the full-time paid exempt employee referred to in this Bylaw, Section 2 alone; above designated dollar amounts to both these individuals on a cosignatory basis. The designated dollar amount, above which two signatures will be required, will be specified in the letter of delegation.

(b) To the chief full-time paid exempt finance and accounting employee of the Association alone; above designated dollar amounts to the chief full-time paid exempt finance and accounting employee and either the Executive Director and Chief Executive Officer or designated full-time paid exempt employee referred to in this Bylaw, Section 2, on a cosignatory basis. The designated dollar amount, above which two signatures will be required, will be specified in the letter of delegation.

(c) To the chief full-time paid exempt finance and accounting employee of the Association on a cosignatory basis either with the full-time paid exempt employee referred to in Section 2 of this Bylaw, or the Executive Director and

Chief Executive Officer, or both, solely for the purposes of authorized investments in accordance with the Investment Guidelines approved by the Executive Committee.

Section 4. Collection and Disbursement of Funds.

Any chapter, committee, member or group of members who collect, hold or disburse funds in behalf of ACM or any of its branches, shall submit at least annually an accounting of such funds at a time and in a manner prescribed by the Secretary/Treasurer.

All funds described above shall be accounted for in the tax returns of ACM except that any chapter, Technical Community, or other group desiring to file a separate tax return may do so upon providing copies of such return to the Secretary/Treasurer at a time and in a manner prescribed by the Secretary/Treasurer.

Failure to submit financial reports by any chapter, committee, member or group of members who hold funds shall be grounds for revocation of charter, dissolution of the committee or group, or expulsion from ACM as provided in the Constitution and Bylaws.

Section 5. Approval for Collection and Disbursement of Funds.

Any chapter, committee, member or group of members desiring to solicit funds in behalf of ACM or any of its branches, or in behalf of any activity sponsored by ACM or its branches, shall obtain in advance the approval of the President. Approval is not necessary for donations of small magnitude, which are for specific goods or services of temporary value.

Any chapter, committee, member or group of members desiring to disburse funds for any purpose shall obtain advance approval of the ACM President except for those expenditures necessary for the normal operation of the group.

Section 6. Compensation Committee.

There shall be a standing Compensation Committee composed of the President, Vice President, and Past President to set the CEO’s compensation, to have oversight over executive compensation, and to review annual budgets for staff salaries and benefits.

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Bylaw 9. The Budget

The Executive Committee shall prepare a detailed budget following the policies adopted by the Council. This budget shall be submitted to the Council 30 days before the Council meeting at which the budget is to be considered.

The Council shall consider, amend, and adopt the budget.

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Bylaw 10. Questions of Importance

Section 1. Scope.

Questions of importance may include any question relating to the policies or public position of the Association, changes in the Constitution, affiliation with other societies, or the holding of business meetings.

Section 2. Lead Petitioner.

The person who transmits the petition to the Association will be considered as the lead petitioner for purposes of formal communication between the petitioners and the Association.

Section 3. Submission to Members.

A notice mailed by the Secretary/Treasurer to all members of the Association asking them plainly for their views on a given question of importance is declared to be a reasonable opportunity under Article 6, Section 6, of the Constitution, provided replies are collected for 30 days following the mailing of such notice and are presented to the Council for inspection. If the question of importance is submitted for the purpose of taking a vote on the question, the provisions of Bylaw 12 shall apply.

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Bylaw 11. Meetings

Section 1. Meetings of Members.

Meetings of all classes of members of the Association may be held at such times and at such places within or outside the State of Delaware as may be determined by a vote of the Members of the Association pursuant to Bylaw 10 and 12 or by the Council. The Association or its constituent groups may hold meetings only in places that are open to all members of the Association.

Section 2. Attendance at Council Meetings.

Any interested member of the Association may attend meetings of the Council and may take part in discussion but not vote.

All Board and Council Chairs unless specified in the bylaws will be ex-officio members of Council and are expected to attend Council meetings for the purpose of reporting and participating in discussions without voting privileges.

Section 3. Order of Business.

At actual business or technical meetings of the Association at which the actual attendance of members is contemplated, the order of business shall be in accordance with an agenda distributed in advance, but such agenda shall be subject to alteration or suspension at the meeting by a majority vote of the Members present. Unless Council has previously approved an alternative procedure, Robert's Rules of Order will prevail.

Section 4. Notice of Meetings of Council and Executive Committee.

Regularly scheduled meetings of the Council or of the Executive Committee may be held without further notice; other meetings may be held on ten days notice, which shall be deemed to have been given when properly mailed ten days prior to the meeting. Lack of timely notice may be waived by any member of the Council or of the Executive Committee.

Section 5. Council Ballots.

On authorization of the Executive Committee, mail ballots may be used for urgent and pro-forma motions. E-mail (electronic mail) will be the primary medium except when there are legal requirements for signed action. The ballot materials will contain a justification of urgency or of the motion's pro-forma nature and will specify an interval for voting after adequate time for discussion. The ballot will permit an affirmative, negative, or abstaining vote.

A Council member can move to postpone the vote, in which case an immediate ballot will be sent out on the motion to postpone. If the motion to postpone does not carry, the original ballot process will be completed. Only one motion on postponement may be considered.

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Bylaw 12 . Ballots

Section 1. Mailing.

Ballots for elections or for referendums shall be sent out under the supervision of the Elections Committee as instructed by the Council. They shall be mailed to the last email address of each Member of the Association. The last date for mailing shall be as fixed by the Council, or by the Elections Committee as instructed by the Council, except that, for elections of officers, the last date for mailing shall be April 25. Any ballot sent to Members shall state the last date for receipt of a voted ballot and shall remind the Member of the requirements for properly returning the ballot. The ballot shall state the day and hour of counting, but such time may be deferred by the Council if pursuant to Section 2 of this Bylaw the Council extends the time for the receipt of ballots.

Section 2. Return and Counting.

The last date for receipt of a ballot shall be at least 30 days after the last date for mailing. All ballots shall be returnable as specified in the ballot instructions and as approved by the Elections Committee. No ballots delivered after the last date for receipt shall be counted unless such date is extended by Council. The ballot of a Member whose dues are in arrears shall not be counted. All other ballots and votes shall be counted as valid. Unless otherwise specified in the Constitution or Bylaws, a plurality of the valid votes shall decide a question or elect a candidate.

Section 3. Certification.

The Elections Committee shall be responsible for the final certification of each election.

Section 4. Ties.

In the case of any ties on balloting questions, the issue shall be decided by the Council. The outcome of a ballot shall be reported to the Association.

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Bylaw 13. Suspension of Bylaws

Council, by the same majority which is required to amend a bylaw, may temporarily suspend one or more requirements of one or more bylaws. A motion for such suspension must include a list of all of the provisions to be suspended, the reason for the suspension and the period of time during which the suspension will be in force.

[**top**]

Bylaw 14. Representatives to Other Organizations

Section 1. Roster of Outside Organizations.

The Secretary/Treasurer shall provide for the maintenance of a roster of outside organizations to which ACM sends Representatives. An organization may be added to or removed from the roster by a majority vote of Council.

Section 2. Appointment, Tenure, and Confirmation.

The President shall appoint each ACM Representative to an outside organization, the appointment being for a specified term. When more than one Representative is sent to an outside organization, the terms of the Representatives shall be staggered so that an approximately equal number of terms expire each year, unless the rules of the outside organization provide to the contrary. An ACM Representative must be an ACM Member. The President may appoint himself or herself as a Representative. Each appointment of a Representative shall be confirmed by Council, except that Council may delegate confirmation for a particular position to the Executive Committee or grant full authority to the President to make the appointment for a particular position.

Section 3. Removal.

The President has the authority to remove any ACM Representative to an outside organization.

Section 4. Vacancy.

In the event that a Representative's office becomes vacant through removal or otherwise, the President shall appoint another Representative to serve until the end of the term. Such an interim appointment shall be confirmed in the same

way as an original appointment.

Section 5. Guidance.

A Representative to an outside organization shall act in accordance with his or her best judgment in representing the interests of ACM, except that Council may direct the actions of any Representative by a two-thirds vote.

Section 6. Temporary Appointments.

In the event that a Representative to an outside organization is unable to attend a meeting of that organization, the President may appoint a temporary representative for that meeting only. The temporary representative has exactly the same duties, prerogatives, and limitations as the elected representative, except as these prerogatives may be restricted by the rules of the outside organization.

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Bylaw 15. ACM Code of Ethics and Professional Conduct

Preamble

Computing professionals' actions change the world. To act responsibly, they should reflect upon the wider impacts of their work, consistently supporting the public good. The ACM Code of Ethics and Professional Conduct ("the Code") expresses the conscience of the profession.

The Code is designed to inspire and guide the ethical conduct of all computing professionals, including current and aspiring practitioners, instructors, students, influencers, and anyone who uses computing technology in an impactful way. Additionally, the Code serves as a basis for remediation when violations occur. The Code includes principles formulated as statements of responsibility, based on the understanding that the public good is always the primary consideration. Each principle is supplemented by guidelines, which provide explanations to assist computing professionals in understanding and applying the principle.

Section 1 outlines fundamental ethical principles that form the basis for the remainder of the Code. Section 2 addresses additional, more specific considerations of professional responsibility. Section 3 guides individuals who have a leadership role, whether in the workplace or in a volunteer professional capacity. Commitment to ethical conduct is required of every ACM member, ACM SIG member, ACM award recipient, and ACM SIG award recipient. Principles involving compliance with the Code are given in Section 4.

The Code as a whole is concerned with how fundamental ethical principles apply to a computing professional's conduct. The Code is not an algorithm for solving ethical problems; rather it serves as a basis for ethical decision-making. When thinking through a particular issue, a computing professional may find that multiple principles should be taken into account, and that different principles will have different relevance to the issue. Questions related to these kinds of issues can best be answered by thoughtful consideration of the fundamental ethical principles, understanding that the public good is the paramount consideration.

The entire computing profession benefits when the ethical decision-making process is accountable to and transparent to all stakeholders. Open discussions about ethical issues promote this accountability and transparency.

1. GENERAL ETHICAL PRINCIPLES. *A computing professional should...*

1.1 Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.

1.2 Avoid harm.

1.3 Be honest and trustworthy.

1.4 Be fair and take action not to discriminate.

1.5 Respect the work required to produce new ideas, inventions, creative works, and computing artifacts.

1.6 Respect privacy.

1.7 Honor confidentiality.

2. PROFESSIONAL RESPONSIBILITIES. *A computing professional should...*

2.1 Strive to achieve high quality in both the processes and products of professional work.

2.2 Maintain high standards of professional competence, conduct, and ethical practice.

2.3 Know and respect existing rules pertaining to professional work.

2.4 Accept and provide appropriate professional review.

2.5 Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.

2.6 Perform work only in areas of competence.

2.7 Foster public awareness and understanding of computing, related technologies, and their consequences.

2.8 Access computing and communication resources only when authorized or when compelled by the public good.

2.9 Design and implement systems that are robustly and usably secure.

3. PROFESSIONAL LEADERSHIP PRINCIPLES. *A computing professional, especially one acting as a leader, should...*

3.1 Ensure that the public good is the central concern during all professional computing work.

3.2 Articulate, encourage acceptance of, and evaluate fulfillment of social responsibilities by members of the organization or group.

3.3 Manage personnel and resources to enhance the quality of working life.

3.4 Articulate, apply, and support policies and processes that reflect the principles of the Code.

3.5 Create opportunities for members of the organization or group to grow as professionals.

3.6 Use care when modifying or retiring systems.

3.7 Recognize and take special care of systems that become integrated into the infrastructure of society.

4. COMPLIANCE WITH THE CODE. *A computing professional should...*

4.1 Uphold, promote, and respect the principles of the Code.

4.2 Treat violations of the Code as inconsistent with membership in the ACM.

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Bylaw 16. Indemnification

The Association shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that the person is or was a member of the Council or an officer of the Association, or was a Council member, officer or employee of the Association acting as a fiduciary of any employee benefit plan of the Association, against expenses (including attorney's fees), judgements, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, to the fullest extent and in the manner set forth in and permitted by the General Corporation Law of the State of Delaware and any other applicable law, as from time to time in effect. Such right of indemnification shall not be deemed exclusive of any other rights to which such Council member, officer or fiduciary of any employee benefit plan may be entitled apart from the foregoing provisions.

The foregoing provisions of this Bylaw shall be deemed to be a contract between the Association and each such Council member, officer or fiduciary of any employee benefit plan who serves or served in such capacity at any time while this Bylaw and the relevant provisions of the General Corporation Law of the State of Delaware and other applicable law, if any, are in effect, and, except to the extent otherwise required by law, any repeal or modification thereof shall not affect any rights or obligations then existing with respect to any state of facts then or theretofore existing or any action, suit, or proceeding theretofore or thereafter brought or threatened based in whole or in part upon any such state of facts.

In addition, the Association may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that the person is or was an employee or agent of the Association, or is or was serving at the request of the Association as a director, officer, employee or agent of another corporation or any partnership, joint venture, trust or other enterprise, against expenses (including attorney's fees), judgements, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, to the fullest extent and in the manner set forth and permitted by General Corporation Law of the State of Delaware and any other applicable law, as from time to time in effect. Such right of indemnification shall not be deemed exclusive of any other rights to which such person may be entitled apart from the foregoing provisions.

The Association shall have power to purchase and maintain insurance or to self-insure on behalf of any person who is or was a director, officer, employee or agent of the Association, or is or was serving at the request of the Association as a director, officer, employee or agent of another corporation, or any partnership, joint venture, trust or other enterprise, against any liability asserted against the person and incurred by the person in any such capacity, or arising out of the person's status as such, whether or not the Association would have the power to indemnify the person against such liability under the foregoing provisions of this Bylaw or under Section 145 of the General Corporation Law of the State of Delaware or any other provisions of law.

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ACM: Formed at the Dawn of Computing

ACM was established in 1947 soon after the creation of ENIAC, the first stored-program digital computer, to “advance the science, development, construction, and application of the new machinery for computing, reasoning, and other handling of information.”

ACM Regional Councils

ACM's Regional Councils provide grassroots support on a global scale. Based in Europe, India, and China, they raise awareness, visibility and relevance of ACM by sponsoring high-quality conferences, expanding chapters, and encouraging greater participation in all dimensions of the society.

ACM Europe **ACM India** **ACM China**

Get Involved with ACM

ACM is a volunteer-led and member-driven organization. Everything ACM accomplishes is through the efforts of people like you. A wide range of activities keeps ACM moving: organizing conferences, editing journals, reviewing papers and participating on boards and committees, to name a few. Find out all the ways that you can volunteer with ACM.

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Exhibit B.VI. Recognition for achievements and significant contributions to the industry or field by peers, government entities, or professional or business organizations

Contact

www.linkedin.com/in/jeremyheiler (LinkedIn)
jeremyheiler.com/ (Personal)

Top Skills

Clojure
Java
Elasticsearch

Jeremy Heiler

Business Compliance Engineering @ Gusto
Fairport, New York, United States

Experience

Gusto
Engineering Manager
April 2026 - Present (4 months)

Gusto acquired Mosey

Mosey
5 years 1 month

Engineering Manager
January 2025 - April 2026 (1 year 4 months)

Staff Software Engineer
October 2024 - January 2025 (4 months)

Senior Software Engineer
April 2021 - October 2024 (3 years 7 months)

Shortcut
Senior Software Engineer
October 2016 - April 2021 (4 years 7 months)

Shareablee
Software Engineer
September 2014 - June 2016 (1 year 10 months)
New York, NY

Beatport
Software Engineer
November 2013 - August 2014 (10 months)
New York, NY

Arc90
Software Engineer
January 2013 - November 2013 (11 months)

Arc90 was acquired by the parent company of Beatport.

Earthlink Business
Software Engineer
October 2011 - December 2012 (1 year 3 months)
Rochester, NY

Paychex
Software Engineer
December 2009 - September 2011 (1 year 10 months)
Rochester, NY

C3 Statistical Solutions
Intern Software Developer
June 2008 - December 2009 (1 year 7 months)
Fulton, NY

Monroe Plan for Medical Care
Intern Software Developer
June 2007 - August 2007 (3 months)
Rochester, NY

Education

State University of New York at Oswego
Bachelor's Degree, Computer Science · (2006 - 2009)

July 28, 2026

To Whom It May Concern,

My name is Jeremy Heiler, and I am an Engineering Manager in Business Compliance Engineering at Gusto. I have spent over fifteen years in software development at companies ranging from Paychex and Earthlink Business to early stage startups such as Mosey. I hold a Bachelor of Arts in Computer Science from the State University of New York at Oswego. My career has been defined by building and scaling distributed systems, which is the perspective I bring when evaluating the work of other engineers. I first met Guilherme Pereira da Silva Alves when he was hired as a Senior Software Engineer at Mosey. I worked alongside him as a peer before becoming his manager for over a year leading up to our acquisition by Gusto, where I continue to supervise his work today.

At Mosey, Mr. Alves was instrumental in developing an AI powered platform designed to automate complex multistate business compliance for companies operating in the United States. He took full ownership of the Notices product, engineering the AI features that process dense government issued compliance notices into actionable summaries. This was a sophisticated implementation involving an AI agent he designed to autonomously navigate various agency portals to retrieve filings and account data. His work directly addressed the inefficiencies of manual data retrieval, allowing us to scale our operations effectively.

Beyond feature development, Mr. Alves demonstrated a strong focus on platform stability and efficiency. He automated our entire deployment pipeline, which resulted in a zero percent deployment failure rate. He also managed to cut cloud infrastructure costs by approximately 23 percent through precise codebase and infrastructure as code improvements. Furthermore, he achieved a tenfold increase in backend processing performance by resolving data fetching bottlenecks and parallelizing external retrieval tasks. These measurable improvements strengthened the reliability and operational readiness of Mosey's platform, while also reducing infrastructure costs.

Since our transition to Gusto, Mr. Alves has taken the technical lead on integrating the acquired compliance platform into Gusto's larger ecosystem. He owned the infrastructure workstream for the initial release, which involved migrating the product off its original container setup onto a managed Kubernetes environment. This process required modernizing deployments, introducing demand based autoscaling, and retiring legacy stacks while maintaining system integrity. He also built critical integration layers for authentication and secrets management, ensuring that both existing and new customers could be served through a unified system.

What differentiates Mr. Alves is his ability to identify and resolve deep technical problems while maintaining a critical eye on the project's direction. He takes direction exceptionally well but remains willing to question a path if he identifies a more correct or efficient alternative. This level of professional maturity is difficult to find and highly valuable in high stakes engineering environments.

If given the opportunity, I would certainly work with Mr. Alves again. I recommend him to leaders and organizations seeking an engineer who combines technical depth in AI and cloud infrastructure with the practical judgment required to deliver results in complex environments. His work on systems that help United States companies manage multistate compliance obligations, while improving the reliability, efficiency, and scalability of the underlying technology, demonstrates the practical value of his expertise. I am confident that his ability to address complex technical challenges can continue to support the development of dependable technology solutions for organizations operating in the United States. I am available to provide further clarification regarding his contributions if needed.

Sincerely,

Jeremy Heiler
Engineering Manager, Business Compliance Engineering
Gusto
525 20th St
San Francisco, CA 94107
jeremyheiler@gmail.com
+1 585 721 8477

Contact

www.linkedin.com/in/reinaldosinerg (LinkedIn)

Top Skills

Cybersecurity
Digital Identity
Digital Certificates

Languages

Portuguese (Native or Bilingual)
English (Professional Working)

Certifications

Technologist Degree in Telecommunications

Patents

MixEvents - Scientific Events Management Software

Reinaldo Borges

M.Sc. in Cybersecurity, developing innovative and sustainable solutions as Chief Technology Officer (CTO) at Soluti. Cybersecurity, Innovation, Products, Software, Systems Administration, Entrepreneurship.
Greater Orlando

Summary

As the Chief Technology Innovation Officer (CTIO) at Soluti Digital, I lead the development and implementation of cutting-edge solutions for digital certification, identity verification, and data protection. With over 15 years of experience in IT systems administration, distributed and web systems development, security planning and management, risk analysis, business continuity, and critical IT operations, I have a strong background and vision for creating secure, reliable, and user-friendly products and services.

I am also a Master of Science (MS) student in Cybersecurity at Georgia Institute of Technology, where I am expanding my knowledge and skills in the latest technologies and best practices for safeguarding cyberspace. I have completed professional programs in Agile Project Management and User Experience (UX) Design at UC Berkeley Extension, and I hold an MBA in Information Technology Governance from IPOG. I am passionate about innovation, security, and education, and I enjoy collaborating with other professionals and organizations to achieve excellence and impact in the digital world.

Professional Experience

Soluti Digital
14 years 4 months

Chief Technology Officer
April 2024 - Present (2 years 1 month)

Board Member
June 2015 - Present (10 years 11 months)
Greater Goiânia, Brazil

Chief Technology Innovation Officer (CTIO)
February 2018 - April 2024 (6 years 3 months)

Goias, Brazil

I.T. Director
January 2012 - February 2018 (6 years 2 months)
Greater Goiania

Everest Digital
Member of the Board of Advisors
January 2022 - Present (4 years 4 months)
Goiânia, Goiás, Brazil

DTO
Member of the Board of Advisors
May 2024 - Present (2 years)

SinergBrasil
Director
November 2007 - Present (18 years 6 months)
Greater Goiania

- Software Development
- Cybersecurity
- Digital Certification

Regional Chemistry Council – 12th Region
IT Manager
August 2002 - October 2007 (5 years 3 months)
Goiânia Area, Brazil

Development of the internal administrative system: process control, revenue collection, outstanding debt, and asset management. Three-tier architecture, web platform.
Deployed and managed the computer network infrastructure at the institution's headquarters (Windows 2000 Server, Conectiva Linux, and Debian servers; Windows XP and 98 clients).
Deployed support services for applications (software) used by CRQ-XII: Microsoft SQL Server, print server (Windows), file server (Windows and Linux), Internet access (Linux Firewall and Proxy), backup (Windows and Linux).
Evaluated and recommended the acquisition or replacement of hardware, software, and telecommunications services, as well as prepared the physical site and installed equipment.

Federal Center for Technological Education of Goiás - CEFET/GO
Scientific Software Researcher
February 2002 - August 2002 (7 months)
Greater Goiânia, Brazil

Developed software for technical telephony calculations, applied to technical telecommunications training. Conducted under a research grant as a required internship for the Telecommunications Technology degree program at the institution.

Academic Background

Georgia Institute of Technology
Master of Science - MS, Cybersecurity · (August 2020 - May 2025)

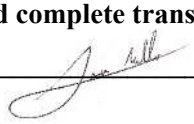
UC Berkeley Extension
Program, Agile Project Management · (2019 - 2019)

UC Berkeley Extension
Professional Program, User Experience (UX) Design · (2019 - 2019)

IPOG - Institute of Graduate and Undergraduate Studies
Master of Business Administration (MBA), Information Technology · (2012 - 2013)

Federal Institute of Goiás (IFG) - Goiânia Campus
Technologist Degree in Telecommunications, Telecommunications, Computer Networks, Systems Development, IT Infrastructure · (2001 - 2004)

I, André Vinícius Inacio Penna Mello, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: October 10, 2026.

Contato

www.linkedin.com/in/reinaldosinerg (LinkedIn)

Principais competências

Cybersecurity
Digital Identity
Digital Certificates

Languages

Português (Native or Bilingual)
Inglês (Professional Working)

Certifications

Tecnólogo em Telecomunicações

Patents

MixEvents - Scientific Events Management Software

Reinaldo Borges

M.Sc. in Cybersecurity, criando soluções inovadoras e sustentáveis como Chief Technology Officer (CTO) na Soluti. Cybersecurity, Inovação, Produtos, Software, Administração de Sistemas, Empreendedorismo.
Greater Orlando

Resumo

As the Chief Technology Innovation Officer (CTIO) at Soluti Digital, I lead the development and implementation of cutting-edge solutions for digital certification, identity verification, and data protection. With over 15 years of experience in IT systems administration, distributed and web systems development, security planning and management, risk analysis, business continuity, and critical IT operations, I have a strong background and vision for creating secure, reliable, and user-friendly products and services.

I am also a Master of Science (MS) student in Cybersecurity at Georgia Institute of Technology, where I am expanding my knowledge and skills in the latest technologies and best practices for safeguarding cyberspace. I have completed professional programs in Agile Project Management and User Experience (UX) Design at UC Berkeley Extension, and I hold an MBA in Information Technology Governance from IPOG. I am passionate about innovation, security, and education, and I enjoy collaborating with other professionals and organizations to achieve excellence and impact in the digital world.

Experiência

Soluti Digital
14 anos 4 meses

Chief Technology Officer
abril de 2024 - Present (2 anos 1 mês)

Board Member
junho de 2015 - Present (10 anos 11 meses)
Goiânia e Região, Brasil

Chief Technology Innovation Officer (CTIO)
fevereiro de 2018 - abril de 2024 (6 anos 3 meses)

Goias, Brazil

I.T. Director
janeiro de 2012 - fevereiro de 2018 (6 anos 2 meses)
Greater Goiania

Everest Digital
Member of the Board of Advisors
janeiro de 2022 - Present (4 anos 4 meses)
Goiânia, Goiás, Brazil

DTO
Member of the Board of Advisors
maio de 2024 - Present (2 anos)

SinergBrasil
Director
novembro de 2007 - Present (18 anos 6 meses)
Greater Goiania

- Software Development
- Cybersecurity
- Digital Certification

Conselho Regional de Química - 12a. Região
Gerente de TI
agosto de 2002 - outubro de 2007 (5 anos 3 meses)
Goiânia Area, Brazil

Desenvolvimento do sistema administrativo interno: controle de processos, de arrecadação, dívida ativa e patrimônio. Sistema em três camadas, plataforma web.
Implantação e administração de infraestrutura de rede de computadores na sede da instituição (servidores Windows 2000 Server, Conectiva Linux e Debian, clientes Windows XP e 98).
Implantação de serviços de suporte à aplicações (softwares) utilizados pelo CRQ-XII: Microsoft SQL Server, servidor de impressão (Windows), servidor de arquivos (Windows e Linux), acesso à Internet (Firewall e Proxy Linux), backup (Windows e Linux).
Diagnóstico e recomendação da necessidade de aquisição/substituição de hardware, software e serviços de telecomunicações, assim como preparação do ambiente físico e instalação dos equipamentos.

Centro Federal de Educação Tecnológica de Goiás - CEFET/GO

Pesquisador de Software Técnico Científico
fevereiro de 2002 - agosto de 2002 (7 meses)
Goiânia e Região, Brasil

Desenvolvimento de softwares para cálculos técnicos em telefonia, que também podem ser utilizados no treinamento técnico em telecomunicações. Trabalho realizado com bolsa auxílio, como estágio curricular para o curso de Tecnologia em Telecomunicações, dessa instituição.

Formação acadêmica

Georgia Institute of Technology

Master of Science - MS, Cybersecurity · (agosto de 2020 - maio de 2025)

UC Berkeley Extension

Program, Agile Project Management · (2019 - 2019)

UC Berkeley Extension

Professional Program, User Experience (UX) Design · (2019 - 2019)

IPOG - Instituto de Pós-Graduação e Graduação

Master of Business Administration (MBA), Information Technology · (2012 - 2013)

Instituto Federal de Goiás (IFG) - Câmpus Goiânia

Tecnólogo em Telecomunicações, Telecomunicações, Redes de Computadores, Desenvolvimento de Sistemas, Infraestrutura de T.I. · (2001 - 2004)

04/23/2026

To Whom It May Concern,

Technology leadership often reveals itself most clearly during periods of constraint and change. In my case, I have spent over fifteen years working in information technology, with a focus on cybersecurity, digital identity, and large-scale system operations. I currently serve as Chief Technology Officer at Soluti Digital, where I oversee the development of solutions related to digital certification and identity verification. My academic background includes graduate studies in Cybersecurity at the Georgia Institute of Technology, as well as prior specialization in information technology governance and professional training in agile project management and user experience design.

It was in my role as Information Technology Director at Soluti that I first worked directly with Guilherme Pereira da Silva Alves. I was responsible for hiring him to manage the development team, which placed him in a position of direct responsibility over ongoing system evolution and delivery. Our collaboration took place during a period when the company was undergoing rapid commercial expansion and significant regulatory changes, requiring simultaneous adaptations to internal systems and external service capabilities.

During this period, Mr. Alves led the development team through complex technical transitions that required integrating new technologies into existing infrastructure. One such effort involved implementing biometric identification systems, which are processes used to verify individuals based on unique physical characteristics. This initiative also included georeferencing capabilities, allowing the system to associate identity verification with location data. These changes required the platform to evolve in terms of scalability and architectural design while maintaining operational continuity.

Another relevant initiative under his leadership was the execution of a pilot project focused on cloud-based digital certification. This type of certification enables secure identity validation without relying on physical devices and requires integration with specialized cryptographic hardware and mobile applications. The success of this project contributed to establishing a new regulatory standard in the Brazilian market, reflecting both technical feasibility and operational reliability.

The systems developed and improved under Mr. Alves' management have continued to operate at a significant scale. The biometric system currently supports more than 10 million registrations and verifications annually, with Soluti's platform responsible for approximately one-quarter of that volume. Additionally, the broader certification infrastructure processes approximately 590 million transactions each year, representing more than half of all such transactions in Brazil. These figures illustrate the sustained impact of the technical and managerial decisions made during his tenure.

From an organizational perspective, Mr. Alves managed a team of fourteen developers and contributed to measurable business growth. During this time, the company expanded its network of representatives from 20 to over 100, while annual certificate issuance increased from 100,000 to 500,000. At the same time, modernization of the applications resulted in a reduction of approximately thirty percent in unit costs, demonstrating an effective balance between technical rigor and operational efficiency.

In my experience, professionals who can align architectural decisions with regulatory requirements, operational scale, and cost efficiency are uncommon. Mr. Alves demonstrated this balance consistently, while also maintaining strong engagement with his team and supporting the development of new talent. His ability to adapt planning to emerging demands and navigate specialized technical challenges contributed meaningfully to the organization's evolution.

Based on my direct experience working with him in a leadership context, I support Mr. Alves as a professional who has demonstrated the capacity to operate in complex, high-impact environments and to contribute to systems that require both reliability and adaptability.

Sincerely,

Reinaldo Borges de Freitas
Chief Technology Officer
Soluti Digital
Reinaldo.borges@soluti.com.br
+1 (925) 705-2188

Contact

www.linkedin.com/in/sean-fahey-37650616 (LinkedIn)
seanfahey.org (Personal)

Top Skills

Engineering Management
Team Leadership
Hiring

Certifications

Supervised Machine Learning: Regression and Classification

Honors-Awards

Engineering Team MVP Award 2025

Sean Fahey

Senior Engineering Manager at Top Hat
Greater Minneapolis-St. Paul Area

Experience

Top Hat
4 years 10 months

Senior Engineering Manager
April 2025 - Present (1 year 1 month)

Responsible for leading two teams, at Top Hat and Aktiv. Both teams are focusing on the core assessment and grading functionality of our two platforms.

Engineering Manager
August 2023 - April 2025 (1 year 9 months)
Minneapolis, Minnesota, United States

Engineering Team Lead
July 2021 - August 2023 (2 years 2 months)
Minneapolis, Minnesota, United States

bluedoor publishing
Lead Dev
April 2014 - June 2021 (7 years 3 months)
Minnetonka, MN

US Internet
Senior Software Engineer
August 2009 - April 2014 (4 years 9 months)
Minnetonka, MN

Carlson School of Management
Research Assistant
May 2008 - March 2011 (2 years 11 months)

Worked for Prof Mahmood A. Zaidi, founder of Carlson's International Programs on these major projects:

- Edited and compiled data for the book "Beyond MBA: Management Education in Transitional Economies".
- Maintained and updated course materials for EMBA taught in Guangzhou.
- Reviewed papers before submission for publication.

Carlson School of Management
Information Tech
2004 - 2008 (4 years)

- Created reports and applications with Oracle DB, MS SQL Server, Crystal Reports, and VB.NET.
- Planned and managed several department software and hardware upgrades.
- Contributed to a number of effective policies used school-wide to manage a new technology service center.
- Maintained department web pages.

WXOW News 19
Floor Crew
2002 - 2003 (1 year)
La Crescent, Minnesota, United States

- Worked with the team to prepare graphics, scripts, tapes, and video equipment for three evening newscasts.
- Ran cameras or teleprompter during newscasts, dealing with rapid changes coming from the director while acting as floor manager.

Education

University of Minnesota-Twin Cities
BA, Philosophy; Minor, Computer Science · (2003 - 2008)

Sean Michael Fahey
HQ: 151 Bloor Street West, Suite 200
Toronto, Ontario M5S 1S4, Canada
sean@seanfahey.org
+1 612-802-9332

To the USCIS Immigration Officer,

I am writing to provide a professional evaluation of Guilherme Pereira da Silva Alves, with whom I collaborated closely during a pivotal period of growth and technical transition. My name is Sean Michael Fahey, and I currently hold the position of Senior Engineering Manager at Top Hat, an education technology company. My career in software engineering and management spans over 15 years, with nearly a decade in leadership roles and a primary focus on core assessment and grading functionality. I earned my Bachelor of Arts from the University of Minnesota and have been recognized throughout my tenure for engineering excellence, including the 2025 Engineering Team MVP Award.

Our professional paths crossed in March 2021 when Mr. Alves joined Top Hat as a Senior Software Engineer. At the time, I was transitioning into a full-time role following an acquisition to establish a specialized engineering team. Mr. Alves was a founding member of this group, and as his supervisor and collaborator, I had the opportunity to oversee his technical methodology and leadership trajectory daily. Our work focused on the Questions team, where we operated remotely between the United States and Canada, using Slack and Google Meet for all architectural and implementation planning.

The technical contributions made by Mr. Alves were central to the viability of our product during a high-stakes delivery cycle in mid-2021. As an edtech organization, we anchor our releases to the start of higher education semesters, so any delay in delivery has a significant impact on institutional adoption. Mr. Alves acted as the technical lead for a critical feature designed to help instructors create student-specific exams. I delegated the design and implementation of this system largely to him, and the solution he produced remains in active use today, serving as the architectural foundation for current upgrades.

His work directly influenced the organization's commercial success and operational stability. For instance, the specific features Mr. Alves architected were instrumental in closing multiple customer deals that would not have been possible without those technical capabilities. Moreover, he dedicated significant effort to our observability and monitoring infrastructure, which comprises specialized tools used to track system health and respond to incidents before they affect users. This infrastructure was a key factor in maintaining a renewal

rate of over 90%, ensuring that customers remained satisfied with the platform's reliability each semester.

As the team evolved and merged with others, Mr. Alves transitioned into the role of the most senior engineer, providing essential mentorship and technical guidance. He distinguished himself not only through implementation but also through highly developed communication and personal skills, which are rare even among the most brilliant developers. He consistently served as a role model for junior engineers, demonstrating resilience and a disciplined approach in navigating complex technical challenges.

Based on my dual perspective as a senior manager and a former peer, I have observed that Mr. Alves possesses a rare combination of architectural maturity and a results-driven mindset. His ability to deliver impactful, stable, and revenue-supporting software within a critical infrastructure is evident in the legacy he has built at Top Hat. Based on these sustained observations of his maturity and technical expertise, I am pleased to offer my full support for his professional endeavors.

Sincerely,



Sean Michael Fahey
Senior Engineering Manager, Top Hat

Contact

www.linkedin.com/in/gord-currie-wpg (LinkedIn)

Top Skills

Technical Leadership
Team Building
Interviewing

Certifications

Scala Essential Training
DevOps Foundations
Symmetric Cryptography Essential Training
Software Architecture: Domain-Driven Design
Secure Coding in Go

Gord Currie

Senior Software Engineering Manager at Axon
Greater Winnipeg Metropolitan Area

Summary

Experienced technology leader with a demonstrated history of building and growing teams and software projects. Focused on implementing the right processes, at the right time, to allow teams to scale, while empowering them to build cutting edge products using modern architectural practices. Proven track record in the public and private sectors, as well as a history of excelling in both high growth startup and established enterprise environments.

Experience

Axon
Senior Software Engineering Manager
April 2022 - Present (4 years)

Bold Commerce
4 years 5 months

Engineering Manager
February 2020 - April 2022 (2 years 3 months)
Winnipeg, Canada Area

Lead of Leads, focused on implementing the right process at the right time to allow teams to scale and build world class ecommerce applications.

Development Lead
December 2018 - February 2020 (1 year 3 months)
Winnipeg, Canada Area

Focused on scaling microservice based REST API project written in Go to meet growing demand and expanding feature set. Grew team from four to 10 members.

Senior Developer
December 2017 - December 2018 (1 year 1 month)
Winnipeg, Canada Area

Focused on taking project from proof of concept stage to production ready scalable application.

Leveraging;

* Go,
* Microservice based architecture,
* Kubernetes, and
* gRPC

Canadian Museum for Human Rights

4 years 5 months

Senior Developer

November 2016 - November 2017 (1 year 1 month)

Winnipeg, Canada Area

Programmer Analyst

July 2013 - November 2016 (3 years 5 months)

Manitoba Blue Cross

Java Developer

January 2012 - June 2013 (1 year 6 months)

Canadian Armed Forces

Infantry Sergeant

July 1997 - November 2010 (13 years 5 months)

Shilo, Manitoba

Education

Red River College

Business Information Technology Diploma, Web Development · (2010 - 2012)

April 27, 2026

To Whom It May Concern,

I am Gord Currie, formerly Senior Software Engineering Manager at Axon Public Safety. My background is rooted in software development and engineering leadership, supported by a Business Information Technology Diploma in Web Development from Red River College. Over the course of my career, I have held a range of technical and leadership roles across organizations such as Bold Commerce, the Canadian Museum for Human Rights, and Manitoba Blue Cross. My work has focused on building and scaling distributed systems, guiding engineering teams, and delivering software solutions in both public sector and commercial environments.

I first became familiar with Guilherme Pereira da Silva Alves in 2018 during a recruitment process in São Paulo, Brazil, where I was involved in interviewing candidates for a Full Stack Developer position at Bold Commerce. Following a successful hiring process, Mr. Alves joined the company and initially worked within a separate team. After a subsequent organizational realignment, his team came under my broader area of responsibility, and from that point forward, I maintained regular visibility into his work through engineering leadership discussions, project reviews, and team performance evaluations.

Within Bold Commerce, Mr. Alves contributed to a microservices-based e-commerce platform. Microservices architecture refers to a system design approach where applications are composed of smaller, independently deployable services that work together, allowing for scalability and flexibility. In this environment, he worked across multiple production applications, supporting both frontend systems, which define user interaction, and backend services, which manage business logic and data processing. His responsibilities included implementing new features, resolving production issues, and participating in deployment processes within a distributed and containerized infrastructure using tools such as Docker and Kubernetes.

What distinguished Mr. Alves in this setting was not only his ability to operate effectively across the full development lifecycle, but also the consistency with which he delivered reliable solutions in complex, high-volume systems. For instance, he played a significant role in upgrading a subscription-based application from PHP version 5 to PHP version 7, a transition that contributed to improved application performance. This type of work requires a level of precision and system awareness that goes beyond standard development tasks, particularly in environments that support continuous financial transactions. In addition, he worked on integrations with payment platforms such as Stripe, Spreedly, and Braintree, which are services used to securely process financial transactions and are widely utilized across digital commerce platforms.

His approach to software development was structured and disciplined, applying practices such as test-driven development and load testing to validate system behavior under real conditions. He also contributed to code reviews and supported junior developers through mentorship, reinforcing consistent standards within the team. When compared to other engineers working in similar environments, Mr. Alves consistently stood out for his reliability and for his ability to contribute beyond his immediate scope, maintaining a level of ownership and consistency that is not commonly observed.

Based on my experience leading engineering teams, professionals who combine technical breadth with consistent execution in production environments are critical to maintaining scalable and dependable systems. In my direct observation, Mr. Alves has demonstrated this capability in a sustained manner, contributing meaningfully in complex engineering contexts that require both adaptability and precision. I am confident that his continued work will support the development of secure, efficient, and scalable digital systems, which are fundamental components of the economic infrastructure and technological advancement of the United States. For these reasons, I fully support his continued professional advancement.

Sincerely,



Gord Currie

Formerly Senior Software Engineering Manager

Axon Public Safety (Retired)

gord@gordcurrie.com

+1 (204) 996-2507

Contact

www.linkedin.com/in/dex-getson (LinkedIn)

Top Skills

Technical Support
Software Installation
Troubleshooting

Dex Getson

Software Development Manager at Bold Commerce
Canada

Experience

Bold Commerce
10 years 11 months

Software Development Manager
October 2022 - Present (3 years 7 months)
Winnipeg, Manitoba, Canada

Development Team Lead
November 2018 - October 2022 (4 years)

Web Developer
March 2016 - November 2018 (2 years 9 months)

Tier 2 Support
June 2015 - March 2016 (10 months)

Saskatchewan Polytechnic
6 years 3 months

Programmer Analyst
March 2014 - June 2015 (1 year 4 months)
SaskPolyTech

- Build enterprise reports using PL/SQL
- Responsible for reading and understanding technical documentation created by third party vendors and other analysts
- Responsible for the design and specification of enhancements indicated by clients
- Build and enhance applications using a relational database
- Provide guidance and coaching to co-workers
- Served as a point of escalation for incidents, problems and requests
- Researched solutions to solve complex problems relating to enterprise applications
- Support Enterprise ITS Applications (Banner, Luminis, EDI, UC4)

Computer Programmer
September 2013 - March 2014 (7 months)

- Support Enterprise ITS Applications (Banner, Luminis, EDI, UC4)

- Work on issues escalated from Junior Programmers

Junior Programmer Analyst
July 2013 - September 2013 (3 months)

- Support Enterprise ITS Applications (Banner, Luminis, EDI, UC4)

Service Desk Analyst
April 2009 - July 2013 (4 years 4 months)
SIAST

- Provide technical support for employees and students
- Manage Enterprise Applications (Exchange 2010, Cisco Unity, Footprints - Call Management)
- Provide support for Microsoft Windows environment
- Provide over the phone and in person customer support

Beltone Hearing
System Administrator
June 2008 - December 2010 (2 years 7 months)
Saskatoon

- Provide technical support for the users
- Maintain computers and network infrastructure in the office

Siemens Transport
Computer Technician
May 2008 - April 2009 (1 year)

- Managed Cell phones (Blackberry's, PDA, Mike phones, etc)
- Managed internal phone system
- Solved desktop computer issues
- Setup and Installed thin clients

Education

University of Athabasca
· (2011 - 2012)

Saskatchewan Institute of Applied Science and Technology
Computer Systems Technology, Computer Science · (2006 - 2008)

242 Hargrave St #1700
Winnipeg, MB R3B 0S3, Canada
April 23th, 2026

To the USCIS Immigration Officer,

In my capacity as a Software Development Manager at Bold Commerce, I have spent several years overseeing engineering teams that maintain and evolve large-scale e-commerce systems. My professional background includes over a decade of experience in information technology, beginning in technical support and progressing through systems administration and software development into leadership roles. I hold a diploma in Computer Systems Technology from Saskatchewan Polytechnic and have completed additional training in leadership and human resource management, which has supported my ability to guide teams and manage complex technical environments.

I began working with Guilherme Pereira da Silva Alves in 2019 when he joined Bold Commerce as an Intermediate Developer on the Subscriptions team, which I was leading at the time. My responsibilities included managing team workload, monitoring delivery progress, and ensuring that the systems under our care met performance and reliability expectations. In this setting, I worked closely enough with Mr. Alves to directly observe both his technical contributions and his approach to solving problems within a production environment.

The Subscriptions application was a core component of our platform, responsible for processing over forty million dollars in transactions each month. Within this context, Mr. Alves contributed to several initiatives that required careful handling of systems operating at scale. He was involved in improving the application's architecture by reducing unnecessary database connections and optimizing webhook processing, which refers to the automated exchange of information between systems when specific events occur. These improvements supported more efficient system behavior and helped maintain stability under high transaction volume.

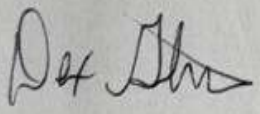
A particularly demanding effort involved upgrading the application from PHP version 5.6 to PHP version 7. This process required working within a large, customized legacy codebase built on a modified version of the CodeIgniter framework, a software framework used to organize web applications. Mr. Alves played a central role in refactoring and stabilizing this system while ensuring that the platform remained operational throughout the transition. The outcome was a more maintainable and performant system that aligned with current development standards. In addition to performance improvements, he also contributed to strengthening payment security by implementing 3D Secure authentication for Stripe transactions. This type of authentication adds an additional verification step to online payments and is part of the compliance requirements established by the Payment Card Industry Data Security Standard (PCI DSS).

What differentiates Mr. Alves from other professionals in the software engineering field is his exceptional combination of technical depth and a strong sense of ownership over long-term system health. While many developers focus on short-term fixes, he consistently approached complex issues with an attention to detail that prioritized long-term reliability and maintainability. His ability to navigate and successfully improve demanding production environments while delivering consistent results distinguished him within the team as a professional of superior technical maturity.

From my perspective as a manager responsible for system performance, individuals with this specific profile are essential to sustaining the complex platforms that drive modern commerce. I am confident that his expertise will allow him to contribute significantly to the development of more secure, efficient, and scalable digital systems. These elements are fundamental to the economic infrastructure and technological advancement of the United States, as they ensure the stability and security of critical financial and data exchange services. I offer my support grounded in the consistent professionalism and results he demonstrated throughout our collaboration.

Sincerely,

Dex Getson
Software Development Manager
Bold Commerce



dex.getson@gmail.com - +1 (306) 612-4686

Contact

www.linkedin.com/in/renee-fisher (LinkedIn)

Top Skills

Customer Satisfaction
Customer Retention
Growth Strategies

Certifications

Certified Java Programmer

Renee Fisher

Software Technology Leader with a passion for improving collaborative operations
Surrey, British Columbia, Canada

Summary

20+ years of successfully building and delivering technology solutions in a breadth of roles.

An empathetic but candid leader who understands the key to any successful team or company is its people and the culture that is created around them.

Experienced in running departments, and driving organizational and delivery efficiencies via cross-department collaborations.

A customer-obsessed engineering leader who focuses on understanding the client's needs. Extensive experience working directly with clients, helping to define, create, and deliver their products across many industries.

Manages conflict and provides a calm presence to all she works with. A trusted and dependable leader who is dedicated and driven to producing quality results.

Strives for nothing less than excellence, and consistently goes above and beyond to guide her teams to deliver exceptional solutions.

Experience

Coconut Software
VP of Engineering
June 2024 - Present (1 year 10 months)

Top Hat
1 year 10 months

VP of Engineering
January 2023 - June 2024 (1 year 6 months)

Senior Director of Engineering
September 2022 - January 2023 (5 months)

Uplight
Director, Core Platform Engineering
December 2021 - September 2022 (10 months)

Responsible for 4 platform team's operations, maintenance, and modernization. Collaborated across Engineering and Product departments with CTO, VPs, Directors, Business Line General Manager, and Product Managers to achieve success for current and future product offerings. Created efficiencies with organizational changes of domain area ownership for improved delivery and communications, removed client-specific work from Platform Engineering, and ensured teams understood and followed Full Service Ownership.

LiveSwitch Inc.
6 years 11 months

Chief Customer Officer
May 2021 - December 2021 (8 months)
Surrey, British Columbia, Canada

Responsible for delivering high-quality customer experiences throughout our entire Customer Success team from Product Support to Professional Services.

- Collaborated with C-suite on company-wide strategies, initiatives, and changes
- Worked with CRO to create new product and support packages that increased value and appeal to sales prospects
- Worked with CRO to define sales strategies based on current customer data
- Improved support ticket response time to clients by 50%
- Improved customer experience by creating a new onboarding process between sales and customer success teams

VP Professional Services
January 2017 - May 2021 (4 years 5 months)
Surrey, British Columbia, Canada

Led the largest department in the company to deliver custom WebRTC application development to our clients:
- Grew the department from 10 to 25 people
- Increased number of clients assisted during a month from 20 to 37
- Drove YOY increase in department revenues

- Responsible for 70-85% of total company revenue
- CSAT: increased repeat clients (YOY) from 34% to 68%
- CSAT: 82% would recommend us or are likely to use us again
- Improved communications by creating weekly/monthly templates detailing the value our services provided
- Created monthly client invoicing processes and reporting metrics
- Created weekly resource utilization forecasts/projections
- Maximized revenue generation by hiring co-ops/interns and junior developers
- Utilized offshore QA and contractors when needed to ensure client's success
- Helped client’s strategies: identified most beneficial features, provided UI/ feature feedback, utilized real-time stats monitoring, improved project status/ tracking

Worked side by side with executives to:
- Create product, services, sales, and marketing strategies
- Identify when to grow, create new departments, and hire to meet company goals and customer demands
- Created company-wide policies and processes for Hiring/Interviewing/ Onboarding,
Probation/Annual Reviews, HR/IT, Role Descriptions, Career Paths, Cross-department Communications

Focused on sales of our product and services to new clients:
- Led new-logo sales during 2019 and 2020
- Improved accuracy of sales estimates/proposals resulting in more successful projects/clients
- Helped create new product offerings increasing product revenue and profit margin in 2020/2021
- Created sales presentations, SOWs, and sell sheets
- Trained/mentored new sales associates on our products/processes

Led/directed the team that created the award-winning virtual fan real-time streaming platform for the WWE Thunderdome. For 47 weeks and 104 episodes, it streamed thousands of people live to a TV audience of millions.

Project Manager
February 2015 - December 2016 (1 year 11 months)
Surrey, British Columbia, Canada

Responsible for ensuring project success on up to 12 client projects concurrently, leading a team of developers to deliver high-quality products on time and on budget.

Standard Project Management tasks were only a small aspect of what my day-to-day job entailed. Participated in sales calls to help clients determine the WebRTC solution to their business problem, created design documents, project estimates, project plans, sales proposals, and the resulting SOWs.

Worked as a Business Analyst for the client and the development team clarifying and defining both the business and technical requirements. Broke down the requirements into workable tasks, planned the project sprints, tracked the developer's tasks/status, and identified the scope and priority changes. Also, tested and verified the developer's work prior to informing the client that the deliverables were complete.

Maintained communication with the client from the start to the end of the project to ensure that they were up to date with the progress of the development work.

Provided direction to my development team, while overcoming incomplete requirements, solving business and technical issues, and employed the most efficient processes to ensure customer satisfaction.

IBM Canada

14 years 6 months

Product Owner

March 2014 - February 2015 (1 year)

Burnaby, BC

Leading a team of BA's, developers, testers, UEDs to redesign a Healthcare Application to ensure consistent design and standardization is applied throughout the application. Some of my responsibilities include:

- applying usability heuristics to improve the UI design
- working with client to obtain user feedback on changes
- presenting UI changes and improvements to client
- defining the application's common UI components and their requirements
- defining a set of page patterns to be applied to the application
- documenting the application's guidelines on UI layout and expected behaviours
- prioritizing the backlog of development tasks

- verifying completed tasks
- reviewing documentation updates

This is a very critical project to the application and is a high stress environment where decisions must be continually reviewed based on scope, schedule and budget.

Technical Business Analyst

2011 - March 2014 (3 years)

Burnaby, BC

Healthcare Application:

- Analysis of client's enhancement requests, presented proposals to client for function changes and new feature enhancements, documented requirements and communicated with development team and testers for implementation.
- Determined complex web service requirements to integrate 2 external vendors to send healthcare data to the application. Overcame a difficult requirements gathering process to determine the vendor critical data and designed a solution that met the vendor’s requirements while remaining generic enough for reuse. Acknowledged as essential to process, and became the expert on the vendor data and the web services.
- Created a requirements documentation template and a web services documentation template for the project.

Development Team Lead

2007 - 2011 (4 years)

Burnaby, BC

Online Media Team:

- Led a 2 to 5 person team in developing new functionality and maintaining current functionality for the front-end application for the system.
- Improved functionality, reliability, and user experience with the system by implementing 100 fixes/enhancements in 2 years.
- Improved new team members time to become productive by creating an 80-page development environment setup document which cut the setup time by two-thirds.
- Designed a new error handling mechanism when JSF error handling wasn't sufficient to use with the complex design of the system. Successfully implemented, and deployed with zero problems found.
- Designed a complex virtual conference web page generation enhancement allowing customer reps to enter conference information, and the system generates all the web pages for the conference. The client was extremely happy as it save time and allows the customer reps without web page

development knowledge to create conferences. Created a 191-page operations manual explaining how to use the system.

Healthcare Application:
- Led a 2 person team to build the core functionality for storing and retrieving healthcare provider information in the application that is integrated with over 20 other components in the application.
- Successfully negotiated scope and requirements simplifications to meet the deadline. Work completed with zero severity 1 or 2 issues.
- Worked closely with over 10 team leads on integration.
- Created status tracking and delivery gates spreadsheet that was presented as an example for all the project managers and team leads to use on the project.

Financial Securities:
- Led 10 person team, working in 4 time zones to build new account management functionality.
- Successfully managed the tasks, schedule, and team focus when major changes to requirements occurred.
- Team successfully delivered on time and budget meeting the aggressive schedule, impressing the client with the functionality and timeliness of the delivery.

Application Developer
September 2000 - 2007 (7 years)
Burnaby, BC

Responsible for prototyping, designing, documenting, estimating, coding, and testing components of each application. The major projects and accomplishments are the following.

eCommerce Website for a Large Retail Company:
- Quickly learned Hibernate to optimize rules and code to minimize the number of calls to the database. Resolved issues with the Hibernate configuration of the application.
- Worked with messaging and integrated address validation.

Financial Securities Application:
- Part of 3 person task force to refactor the entire administration codebase in 2 weeks to improve the software maintainability. Successfully completed the task in an extremely stressful, high-pressure situation.

- Improved product by creating the ability to customize the look of the application for each customer's own brand. Documented steps to create new branding for the customers.

Telecommunications Product:
- Concurrently worked with 11 clients to resolve over 110 application problems in 1 year, including solving severity 1 issues within 2 hours.
- Customized application for a client to increase security for payment entry, and allow backdated services orders.
- Trained offshore team on the environment, development language, and product when transitioning support work; included creating quick look up document of common functions and features.

ACD Systems
Software Developer - Co-op work term
September 1999 - December 1999 (4 months)
Victoria, BC

Created AVI and MPEG plugins for ACDSee, extracting frames from AVI or MPEG files and creating the thumbnail frame, or an animation of multiple frames.

Precise Software Technologies
Software Engineer - Co-op work term
January 1999 - April 1999 (4 months)
Nepean, ON

Wrote, ported and tested C code for the Precise/MQX Real Time Operating System used in embedded applications on various board and microprocessor packages.

Wrote, ported and tested C code for the Precise/ Real Time TCP/IP Communications Suite used for embedded I/O applications on various board and processor packages.

Created custom Ethernet driver to translate IP addresses from hard coded, non-unique addresses to unique addresses for each node on the network.

NovAtel Inc.
Software Engineer - Co-op work term
May 1998 - August 1998 (4 months)
Calgary, AB

Wrote C++ functions to test the inter-process communication software on the GPS receiver.

Ported and merged the inter-process communication software on the GPS receiver.

Created requirement specifications on the power down modes for the GPS receiver.

Harris Canada, Wireless Access Division
Software Designer - Co-op work term
September 1997 - December 1997 (4 months)
Calgary, AB

Developed a language manager for the cellular product allowing client software to obtain language independence. Designed and developed a GUI allowing users to create and edit the language files used with the language manager.

Shell
Downstream Marketing Systems Analyst - Co-op work term
January 1997 - April 1997 (4 months)
Calgary, AB

Converted the on-line report viewing system to a new software system by developing the interaction process of programs to send the reports to the new system.

Created a monthly airmiles report to collect data for the gold gas purchases.

Education

University of Victoria
Bachelor of Engineering (B.Eng.), Computer Engineering · (1996 - 2000)

Okanagan College
General Science · (1995 - 1996)

Salmon Arm Senior Secondary
· (1993 - 1995)

04/23/2026

To USCIS,

I am writing this letter to evaluate the professional trajectory and technical leadership of Guilherme Pereira da Silva Alves. My name is Renee Fisher, and I currently serve as Vice President of Engineering at Coconut Software. I hold a Bachelor of Engineering, Computer Specialty, from University of Victoria and bring over two decades of experience in engineering leadership and software development. Throughout my career, I have overseen large scale engineering organizations and been responsible for the strategic direction of complex technical platforms that serve a significant user base.

I first became familiar with the work of Mr. Alves in 2022 when I joined Top Hat as Senior Director of Engineering, transitioning to Vice President of Engineering at Top Hat. Mr Alves had joined Top Hat as a Senior Software Engineer in 2021. During this period, I held oversight of the engineering department, and our professional relationship developed through high level project reviews and strategic alignment meetings focused on our product's core functionalities. Mr. Alves was a founding member of a critical assessment team, and I maintained visibility into his technical contributions as he worked to solve fundamental challenges within our platform architecture.

Across the engineering organization, Mr. Alves distinguished himself as a professional with a technical command that is not commonly observed, even among experienced peers. He focused on the Questions functionality, which is the architectural engine used to create and deliver educational assessments. Within this context, he worked on the implementation of AI question generation, a project that required integrating sophisticated backend logic with intuitive user experiences. The standards he established for high scale, reliable question generation were recognized as a benchmark for excellence within our engineering department, often serving as a model for how complex, automated features should be structured and maintained.

What sets Mr. Alves apart from his peers in the field is his ability to create solutions that are not merely focused on a single business problem, but are replicable across different contexts and platforms. For instance, his work on modernizing question builder systems involved architectural decisions that improved performance and maintainability at a level that influenced development practices beyond his immediate team. These methodologies provided a blueprint for system stability that could be applied in various high volume environments, demonstrating an impact that reaches across the broader software engineering field and its standards for educational technology infrastructure.

Furthermore, Mr. Alves demonstrated a level of professional maturity that allowed him to act as an influential leader within the engineering community. He consistently prioritized the long term health of the software ecosystem over short term

convenience, and his ability to communicate technical complexity to diverse teams was essential during the development of our most critical features. His contributions to technical documentation and observability infrastructure ensured that the systems he built were not only scalable but also sustainable for future growth.

Based on my direct observation of his leadership and the replicability of his technical solutions, I am confident that his expertise will continue to have a significant impact on the advancement of secure and efficient digital systems. The methodologies and technical rigor he brings to his work are fundamental to the technological progress and economic infrastructure of the United States, as they address the growing global demand for reliable and scalable technological platforms. For these reasons, I offer my full support for his professional endeavors.

Sincerely,



Renee Fisher
Vice President of Engineering
Coconut Software

Suite 201, 111 Research Drive
Saskatoon, SK S7N 3R2, Canada
reneebfisher@gmail.com

Contact

www.linkedin.com/in/agazzoli (LinkedIn)
www.gazz.io (Personal)

Top Skills

Product Management
Software Development
Agile Methodologies

Languages

English
Italian

Adrian Gazzoli

Product at Top Hat
Toronto, Ontario, Canada

Summary

I am a Group Product Manager at Top Hat with experience delivering products in the financial, education, and automotive industries. I hold an Engineering Degree from the University of Waterloo, love any new tech that could help automate my home, and am a co-founder of a not-for-profit aimed at men's health.

Experience

Top Hat
3 years 3 months

Group Product Manager
December 2025 - Present (4 months)
Toronto, Ontario, Canada

Senior Technical Product Manager
December 2023 - December 2025 (2 years 1 month)
Toronto, Ontario, Canada

Technical Product Manager
January 2023 - November 2023 (11 months)
Toronto, Ontario, Canada

Mogo
Product Manager
December 2020 - January 2023 (2 years 2 months)

Oversaw the development and launch of MogoTrade, Canada's second commission-free trading platform, from initial discovery through to design, waitlist release, and the full launch. I was responsible for conducting thorough market analysis to shape the product vision and user experience, guiding agile project teams in developing and delivering the trading platform.

A key achievement was the introduction of real-time data streaming and instant money transfers, significantly enhancing the platform's financial accessibility and user experience in the Canadian market.

Moka Financial Technologies
Product Manager
December 2020 - January 2023 (2 years 2 months)

At Moka, I honed the onboarding and activation process alongside improving core features, achieving a 22% increase in onboarding conversion rates. My tenure was marked by a significant company milestone when Moka was acquired by Mogo.

TribalScale
Product Manager
September 2018 - December 2020 (2 years 4 months)
Toronto, Canada Area

Led the discovery, design and development process of many world-class applications in the automotive, banking, and entertainment spaces for many Fortune 500 companies

The100kPledge
Co-Founder / Product Manager
June 2020 - November 2020 (6 months)

Helped deliver the first iteration of The100kPledge. To date, we have successfully received over $40 billion pledged.

The 100kPledge is a public social contract, and tracker for professionals and organizations committing to Black communities' economic empowerment through hiring, investment, and donations.

Freshii
Software Engineer
January 2018 - April 2018 (4 months)
Toronto, Ontario, Canada

Performed frontend web development in React and integrated fully functioning CMS. Designed mobile ordering interface in Sketch for iOS, Android and Web. Designed, developed and deployed microsite for marketing campaign over the course of a weekend. Created secure backend server for storing and serving sales data across 400 stores which utilized OAuth for security.

Helpful.com
Agile Software Engineer
April 2017 - August 2017 (5 months)
Toronto, Ontario, Canada

Performed full stack development tasks in an agile team. Helped create key UI features of mobile app including onboarding flow, profile shelf, search results, and skills tags using Swift. Worked on core features in the backend of the app including email notifications, specific push notifications, and default pinned instruction videos. Implemented video reply functionality on web application.

TribalScale

Agile Software Test Engineer
August 2016 - December 2016 (5 months)
Toronto, Ontario, Canada

Performed exploratory, regression, and stress tests on iOS, Android, Web, watchOS and tvOS apps. Increased productivity by over 40% by developing Slack chat-bots to automate QA tasks. Decreased manual testing by over 30% by writing automation scripts with XCTest and BrowserSync.

Scotiabank

9 months

Business Analyst, Project Management Office, Global Transaction Banking
January 2016 - April 2016 (4 months)
Toronto, Canada Area

Intern, Operational Design and Effectiveness, Canadian Banking & Finance
August 2015 - December 2015 (5 months)

Scotiabank Global Banking and Markets

Business Analyst, Trading & Operational Risk Control
January 2015 - April 2015 (4 months)

• Assisted with automating existing processes surrounding monthly reporting.

• Supported Capital Markets business lines in managing trading, operational and compliance risks.

• Assisted with broker selection and approval process by performing broker due diligence with
recommendations.

• Assisted with the identification of control gaps in trading operations and recommending appropriate policies procedures to mitigating operational risks.

• Followed up on audit issues raised to ensure corrective actions were implemented.

• Organized monthly operational risk meetings for trading management.

Scotiabank Global Banking and Markets
Co-op Analyst, Strategic Initiatives
April 2014 - August 2014 (5 months)

• Identified business benefits & potential savings for opportunities in a diagnostic phase.

• Worked with the business to prioritize the opportunities to develop a tactical implementation plan for the business area to take ownership of the opportunities, drove implementation & monitored progress.

• Facilitated training & workshops; provided consultation to the target business groups in implementing LEAN/Six Sigma management systems acting as an agent of change.

• Analysed business processes, developed hypothesis, synthesized findings, & communicated opportunities for improvement across the Lean/Six Sigma.

• Worked in a team environment alongside the project lead, to drive all aspects of the diagnostic, design and implementation stages. Continuously improved both the business and our team.

Education

University of Waterloo
Bachelor of Applied Science - BASc, Management Engineering

St. Michael's College School
High School Diploma · (2009 - 2012)

April 23, 2026
Toronto, Ontario, Canada
Email: adriangazz@gmail.com
Phone: +1 416 671 3355

To the USCIS Immigration Officer,

My name is Adrian Gazzoli, and I currently serve as a Group Product Manager at Top Hat, an education technology company based in Toronto, Canada. I hold a Bachelor of Applied Science in Management Engineering from the University of Waterloo and have built my career leading the development of digital products across industries such as financial technology, education, and automotive. In my role, I am responsible for defining product strategy, guiding cross-functional teams, and ensuring that complex technical initiatives deliver measurable impact for users and organizations.

I had the opportunity to work directly with Guilherme Pereira da Silva Alves at Top Hat from January 2023 to January 2024. During that time, I was a Product Manager, and Mr. Alves was a Senior Software Engineer on the same product team. Our collaboration was continuous and hands-on, as we worked together on key initiatives that required close coordination between product definition and technical execution. This included developing new platform capabilities and modernizing core system components used by instructors and students.

One of the most significant examples of Mr. Alves's work was his leadership in developing a new question builder, a central feature of the Top Hat platform used by universities across North America. This project involved replacing a legacy architecture with a modern and scalable system. Mr. Alves was responsible for leading both backend and frontend implementation, making critical architectural decisions, and ensuring that the transition maintained system stability. His ability to evaluate the limitations of the existing system and design a more efficient structure was instrumental in the success of this initiative. As a result, the engineering team reduced development time for new question types by approximately 4 months, enabling faster iteration and delivery of new features to users.

In addition, I observed Mr. Alves's work on a feature that enabled instructors to excuse students from assignments. This required careful handling of complex grading logic and multiple edge cases. He delivered a solution that was both reliable and adaptable, demonstrating strong attention to detail and a deep understanding of system behavior. His technical capabilities extend across multiple technologies, including Python, PHP, and React, and he consistently demonstrates the ability to operate effectively across the full stack. His certification as a Zend Certified Engineer further reflects his depth of expertise in PHP and his commitment to professional standards.

Beyond his technical execution, Mr. Alves contributed to the broader effectiveness of the engineering team. He actively participated in technical discussions, mentored other engineers, and consistently approached challenges with a structured, thoughtful mindset. His work not only addressed immediate technical needs but also improved the team's ability to build and maintain scalable systems over time.

Based on my direct experience working with him, I am confident that Mr. Alves possesses the technical maturity, problem-solving ability, and professional judgment required to contribute meaningfully in complex and high-impact environments. His track record of delivering well-designed systems and improving development efficiency supports my strong recommendation.

Sincerely,
Adrian Gazzoli
Group Product Manager at Top Hat



5th Latin American Free Software Conference

LATINOWARE 2008

CERTIFICATE

We hereby certify that

Guilherme Pereira da Silva Alves

Presented the lecture:

"Class V: Distance learning through Videoconferencing in Moodle"

at the 5th Latin American Free Software Conference - Latinoware 2008, held from 10/30/2008 to 11/01/2008 at the Itaipu Technological Park - PTI in Foz do Iguaçu - Paraná, with a total workload of 1 hour.

Juan Carlos Sotuyo
Managing Director of the Itaipu Technological Park Foundation

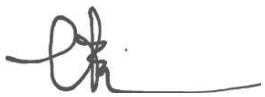
Marli Portella
IT Superintendent of Itaipu Binacional

Marcos Siriaco Martins
PRESIDENT OF THE TRINATIONAL FREE SOFTWARE

Organized by

Supported by

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Date: August 4, 2026.

V Conferência Latino-Americana
de Software Livre

LATINOWARE 2008

CERTIFICADO

Certificamos que

Guilherme Pereira da Silva Alves

Ministrou a palestra:

"Classe V: Educação à distância com Videoconferência no Moodle"

Na V Conferência Latino-Americana de Softaware Livre – Latinoware 2008 de 30/10/2008 a 01/11/2008 realizado no Parque Tecnológico Itaipu – PTI em Foz do Iguaçu – Paraná, com a carga horária de 1 hora.

Juan Carlos Sotuyo
Diretor Superintendente da Fundação
Parque Tecnológico Itaipu

Marli Portella
Superintendente de Informática
Itaipu Binacional

Marcos Siriaco Martins
PRESIDENTE DO PSL BINACIONAL

Realização

Apoio

6th Latin American Free Software Conference

LATINOWARE 2009

CERTIFICATE

We hereby certify that

Guilherme Pereira da Silva Alves

Presented the lecture:

"Developing institutional systems with Zend Framework and jQuery",

at the 6th Latin American Free Software Conference - Latinoware 2009, held from 10/22/2009 to 10/24/2009 at the Itaipu Technological Park - PTI in Foz do Iguaçu - Paraná, with a total workload of 1 hour.

Juan Carlos Sotuyo
Managing Director of the Itaipu Technological Park Foundation

Marli Portella
IT Superintendent of Itaipu Binacional

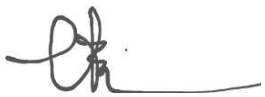
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Date: August 4, 2026.

VI Conferência Latino-Americana
de Software Livre

LATINOWARE 2009

CERTIFICADO

Certificamos que

Guilherme Pereira da Silva Alves

Ministrou a palestra:

"Desenvolvendo sistemas institucionais com Zend Framework e jQuery" ,

Na VI Conferência Latino-Americana de Software Livre – Latinoware 2009, de 22/10/2009 a 24/10/2009 realizado no Parque Tecnológico Itaipu – PTI em Foz do Iguaçu – Paraná, com a carga horária de 1 hora.



Juan Carlos Sotuyo
Diretor Superintendente da Fundação
Parque Tecnológico Itaipu

Marli Portella
Superintendente de Informática
Itaipu Binacional

Marcos Siriaco Martins
PRESIDENTE DO PSL-TRINACIONAL

Certificate

We hereby certify that **Guilherme Pereira da Silva Alves** participated and contributed as a **speaker** at the Latin American Free Software Installation Festival (FLISOL), held in Goiânia on April 27, 2013. Guilherme presented the lecture entitled "**Dependency management with Composer**", sharing knowledge and promoting the use of free software tools within the community.

Andressa R. Martins
President of ASL-GO
(Goiás Free Software Association)

Sheldon Leal Martins de Oliveira
General Coordinator
of FLISOL Goiânia

Goiás Free Software Association
ASL-GO

ALFA
ALVES FARIA
COLLEGES

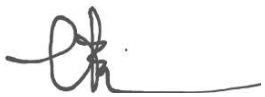
Goiânia-GO
Brazil
www.flisolgo.org.br/gyn

Latin American
Free Software
Installation Festival

Goiânia, April 27, 2013

flisol

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Date: August 4, 2026.

Certificado

Certificamos que **Guilherme Pereira da Silva Alves** participou e contribuiu como **palestrante** no Festival Latino-americano de Instalação de Software Livre (FLISOL), realizado em Goiânia no dia 27 de abril de 2013. Guilherme apresentou a palestra intitulada "**Gerenciamento de dependências com Composer**", compartilhando conhecimento e promovendo o uso de ferramentas livres na comunidade.

Presidente da ASL-GO

Coordenador Geral
do FLISOL Goiânia

Goiânia, 27 de Abril de 2013

Festival Latino-americano
de Instalação de
Software Livre

ASL-GO

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Brasil
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campus party BRAZIL

CPBR17 Brasília

campus party institute

SPEAKER CERTIFICATE

We hereby certify that Guilherme Pereira da Silva Alves

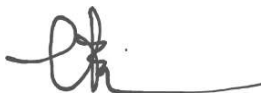
participated in CPDEdition2020 from July 9 to 11, 2020 with

10 hours of in-person content.



SIDIANE ZANIN
NATIONAL DIRECTOR OF THE
CAMPUS PARTY INSTITUTE

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Date: August 4, 2026.

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Brasília

instituto campus party

CERTIFICADO

DE PALESTRANTE

Certificamos que Guilherme Pereira da Silva Alves

participou da CPDEdition2020 nos dias 09 a 11 de Julho de 2020 com

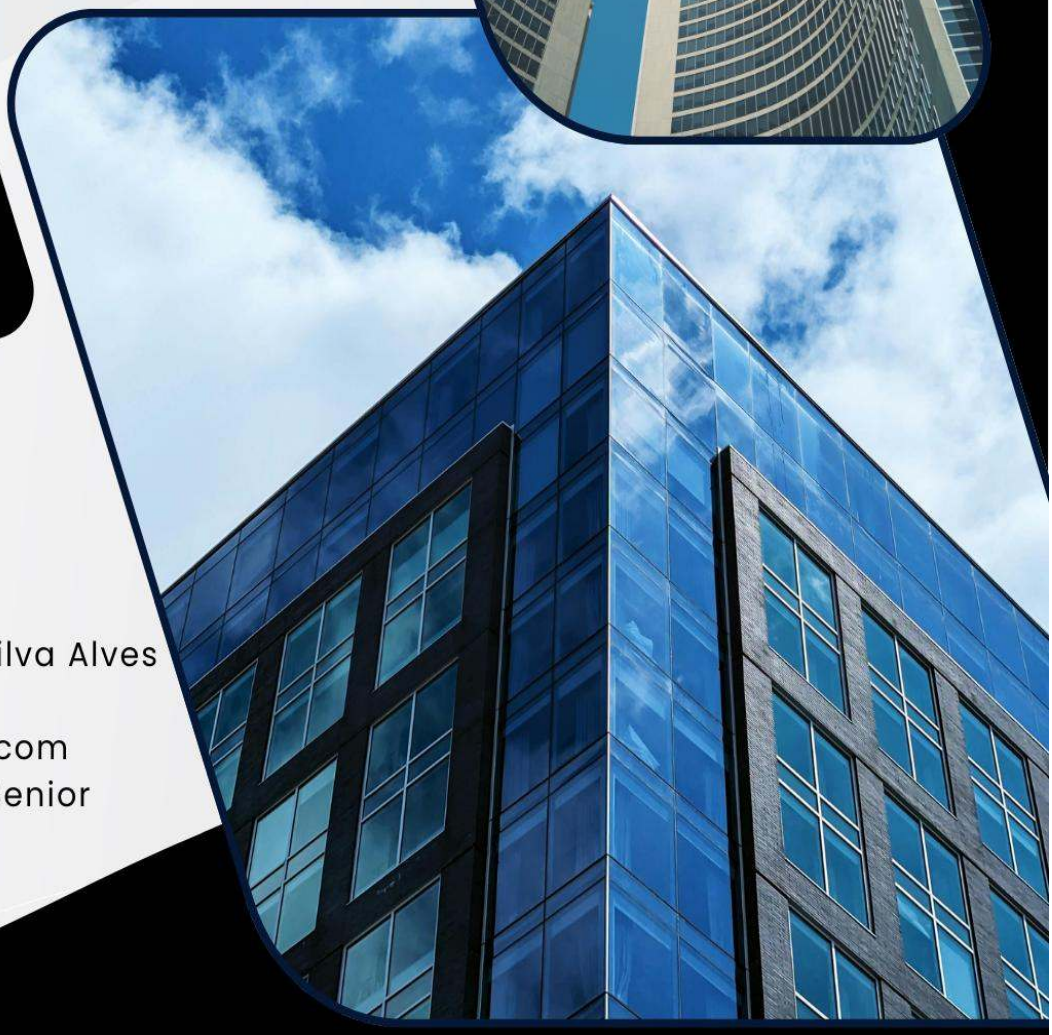
10 horas de conteúdo presencial.

SIDIANE ZANIN
DIRETORA NACIONAL DO
INSTITUTO CAMPUS PARTY

Exhibit C.I – First Prong – Substantial Merit and National Importance

BUSINESS PLAN





2026

Name: Guilherme Pereira da Silva Alves
Phone: +1(204)333-3532
E-mail: guilhermepsa@gmail.com
Position: General Manager & Senior Software Engineer

Prepared by:
Nextus Plan

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APPENDIX 1

1.0 Executive Summary

Vertex Digital Systems LLC will be established by Mr. Guilherme Pereira da Silva Alves as a technology company focused on helping U.S. businesses adopt artificial intelligence, modernize software systems, strengthen cloud infrastructure, and automate operational processes. The company will be headquartered in Dallas, Texas, a major technology hub that provides access to a highly skilled workforce, a growing innovation ecosystem, and a diverse business community seeking advanced technology solutions.

The company will provide services in Artificial Intelligence Integration and Business Process Automation, Custom Software and SaaS Platform Development, Cloud Infrastructure Modernization and Deployment, DevOps and Software Delivery Optimization, and Intelligent Data Platforms and AI Agent Development. These services are designed to help organizations improve productivity, reduce operational inefficiencies, accelerate digital transformation initiatives, and strengthen their ability to compete in increasingly technology-driven markets.

Many small and medium-sized enterprises across the United States continue to face challenges associated with fragmented technology environments, legacy software systems, limited automation capabilities, inefficient data utilization, and shortages of specialized technical talent.[1] These limitations often restrict business growth, reduce operational efficiency, and hinder the adoption of emerging technologies such as artificial intelligence and cloud-native platforms. Vertex Digital Systems LLC will address these challenges by developing scalable software solutions, implementing AI-enabled automation systems, modernizing digital infrastructure, and creating intelligent platforms that improve business operations and decision-making.

The company will leverage modern software engineering methodologies, cloud technologies, infrastructure automation, artificial intelligence frameworks, and data-driven architectures to deliver solutions that support operational scalability, system reliability, cybersecurity readiness, and workforce productivity. Through these activities, Vertex Digital Systems LLC will assist organizations in reducing manual workloads, improving information accessibility, streamlining internal processes, and increasing the efficiency of digital operations.

Vertex Digital Systems LLC will operate through a flexible delivery model that combines remote technology services with on-site collaboration when required for project planning, implementation, system integration, and stakeholder engagement. This model will enable the company to serve organizations throughout the United States while maintaining close collaboration with clients during critical stages of project execution.

[1] https://link.springer.com/article/10.1007/s11846-024-00744-2

Founder Background

Mr. Guilherme Pereira da Silva Alves is a technology professional with more than fifteen years of experience in software engineering, cloud infrastructure, DevOps, systems architecture, and artificial intelligence implementation. Throughout his career, he has contributed to the development of large-scale SaaS platforms, enterprise software solutions, cloud-native applications, infrastructure automation frameworks, and AI-powered systems serving organizations across multiple industries.

His professional experience includes senior engineering roles involving software architecture, cloud infrastructure optimization, DevOps implementation, large language model integration, intelligent automation systems, and enterprise platform development. Mr. Alves has successfully delivered projects that improved operational efficiency, reduced infrastructure costs, accelerated software deployment processes, enhanced platform scalability, and automated complex business workflows through the application of advanced technologies.

His background spans software development, artificial intelligence integration, cloud computing, infrastructure orchestration, cybersecurity best practices, system observability, API development, data architecture, and enterprise application modernization. He has also led technical initiatives, mentored software professionals, and collaborated with multidisciplinary teams to transform business requirements into scalable technology solutions.

As General Manager & AI Solutions Director, Mr. Alves will oversee the company's strategic direction, technology initiatives, workforce development, service delivery operations, and implementation of advanced solutions that support the digital transformation needs of U.S. businesses.

National Impact and Economic Relevance

Artificial intelligence, cloud computing, automation, and software modernization have become critical drivers of productivity, innovation, and economic competitiveness within the United States.[2] Businesses increasingly depend on digital technologies to manage operations, analyze information, support customers, maintain cybersecurity, and improve efficiency across organizational functions.

However, many organizations, particularly small and medium-sized enterprises, continue to experience barriers to adopting advanced technologies due to limited technical resources, outdated infrastructure, fragmented software environments, and growing complexity in digital operations.[3] These challenges can restrict innovation, increase operating costs, and reduce competitiveness within domestic and global markets.

[2] https://www.deloitte.com/us/en/insights/topics/technology-management/tech-trends/2025/tech-trends-future-of-ai-for-it.html

[3] https://www.sciencedirect.com/science/article/abs/pii/S0160791X24000319

Vertex Digital Systems LLC will help address these challenges by delivering technology solutions that enable organizations to modernize systems, implement artificial intelligence capabilities, automate business processes, improve cloud infrastructure, and utilize data more effectively. The company's services are designed to increase operational efficiency, strengthen business resilience, and accelerate the adoption of advanced digital technologies throughout the U.S. economy.

The company's services will:

- Implement artificial intelligence solutions that automate repetitive business processes and improve operational productivity
- Develop custom software platforms that support digital transformation and organizational growth
- Modernize cloud and hybrid infrastructure environments to improve reliability, scalability, and security
- Optimize software delivery processes through DevOps automation and infrastructure orchestration
- Create intelligent data platforms and AI-driven systems that support data-informed decision-making and workforce efficiency

From an economic perspective, Vertex Digital Systems LLC anticipates steady growth driven by increasing demand for artificial intelligence implementation, software modernization, cloud infrastructure services, and automation technologies. As operations expand, the company plans to create high-skilled employment opportunities in software engineering, artificial intelligence, cloud computing, DevOps, data engineering, project management, business development, and administrative operations. These positions will contribute to workforce development within sectors that are critical to the long-term competitiveness of the United States.

1.1 Nature and Scope of the Business

Vertex Digital Systems LLC will operate as a technology company specializing in artificial intelligence implementation, software engineering, cloud infrastructure modernization, business process automation, and intelligent data solutions. The company will help organizations improve operational efficiency, strengthen digital capabilities, and accelerate the adoption of advanced technologies that support business growth and competitiveness.

The company will serve small and medium-sized enterprises (SMEs) across the United States that seek to modernize technology environments, automate workflows, improve data utilization, and deploy scalable software platforms. Many organizations face challenges associated with fragmented systems, manual processes, legacy applications, and limited access to specialized technical expertise. Vertex Digital Systems LLC will address these challenges through the development of tailored technology solutions that improve productivity, operational performance, and digital resilience.

Operations will focus on the design, development, deployment, and optimization of software applications, cloud-based environments, automation frameworks, and AI-powered systems. Projects will be executed using modern software engineering practices, cloud-native technologies, infrastructure automation tools, and data-driven development methodologies to ensure scalability, security, reliability, and long-term maintainability.

Core Business Activities

1. **Artificial Intelligence Integration and Business Process Automation:** Vertex Digital Systems LLC will implement artificial intelligence solutions that automate repetitive tasks, streamline business operations, and improve decision-making capabilities. Services will include AI-powered assistants, intelligent workflow automation, document processing systems, enterprise knowledge platforms, and large language model (LLM) integrations designed to increase productivity and reduce operational inefficiencies.
2. **Custom Software and SaaS Platform Development:** The company will develop custom software applications and SaaS platforms that support digital transformation initiatives and operational growth. Solutions will include web and mobile applications, enterprise software systems, API integrations, platform modernization projects, and scalable cloud-native applications tailored to the operational requirements of client organizations.
3. **Cloud Infrastructure Modernization and Deployment:** Vertex Digital Systems LLC will design, deploy, and optimize cloud and hybrid infrastructure environments that improve system reliability, scalability, and operational efficiency. Services will include cloud migration, infrastructure automation, Kubernetes implementation, Infrastructure-as-Code deployment, disaster recovery planning, and performance optimization initiatives.
4. **DevOps and Software Delivery Optimization:** The company will implement DevOps frameworks that improve software delivery processes and operational stability. Services will include CI/CD pipeline development, deployment automation, environment standardization, monitoring and observability implementation, infrastructure orchestration, and software lifecycle optimization to support faster and more reliable technology deployment.
5. **Intelligent Data Platforms and AI Agent Development:** Vertex Digital Systems LLC will develop intelligent data platforms and AI-driven systems that help organizations collect, process, analyze, and utilize information more effectively. Services will include AI agent development, retrieval-augmented generation (RAG) systems, automated data extraction platforms, business intelligence integration, predictive analytics environments, and enterprise knowledge management solutions that support data-driven operations and workforce efficiency.

Through these activities, Vertex Digital Systems LLC will contribute to the modernization of digital infrastructure, expansion of artificial intelligence adoption, improvement of business productivity, and development of advanced technology capabilities within the United States.

1.2 Mr. Guilherme Pereira da Silva Alves' Expertise

Mr. Guilherme Pereira da Silva Alves is an accomplished software engineering and technology professional with more than fifteen years of experience designing, developing, implementing, and optimizing complex software systems, cloud infrastructure environments, automation frameworks, and artificial intelligence solutions. Throughout his career, he has built a strong track record of delivering scalable technology platforms that improve operational efficiency, reduce infrastructure costs, automate business processes, and support digital transformation initiatives for organizations operating in highly demanding and data-driven environments.

His expertise spans multiple disciplines within the technology sector, including software engineering, artificial intelligence integration, cloud computing, DevOps, systems architecture, infrastructure automation, application modernization, and enterprise platform development. He possesses extensive experience working with modern programming languages and frameworks, including Python, PHP, Go, TypeScript, JavaScript, React, and cloud-native technologies that support the development of scalable and secure digital solutions.

Mr. Alves currently serves as a Staff Software Engineer at Gusto, a leading United States payroll and business-compliance company. He assumed this position in 2026, when Gusto acquired Mosey, the compliance-technology company where he had worked as an early Senior Software Engineer and where the cloud, automation, and artificial intelligence foundations he engineered contributed directly to the company becoming an acquisition target. At Mosey, whose platform automates multi-state business compliance for United States companies, he built artificial intelligence systems that convert dense, government-issued compliance notices into accurate summaries for customers using large language models, and he designed autonomous AI agents capable of navigating government and agency portals to retrieve filings, obligations, and account data without additional analyst staffing. On the platform side, he automated the deployment pipeline to a zero-percent failure rate, reduced cloud infrastructure costs by approximately 23%, and improved backend processing performance roughly tenfold by resolving data-retrieval bottlenecks, while helping uphold SOC 2 compliance. Following the acquisition, he took technical lead on integrating Mosey's compliance platform into Gusto's managed cloud environment, unifying authentication, security, observability, and artificial intelligence capabilities across the combined product.

Prior to his current position, Mr. Alves worked as a Senior Software Engineer at Top Hat, one of Canada's leading educational technology companies. During his tenure, he contributed to the development and evolution of large-scale SaaS platforms serving educational institutions throughout North America. His responsibilities included designing microservices architectures, improving cloud infrastructure efficiency, modernizing application frameworks, and developing artificial intelligence tools capable of generating educational content through advanced prompt engineering techniques. His work contributed to measurable improvements in application performance, system reliability, and operational efficiency across large user environments.

Among his measurable contributions, he built the platform's question-bank module and an artificial intelligence question generator, reduced cloud infrastructure costs by approximately 20%, decreased grade-calculation defects by roughly 30%, and led a frontend modernization that improved rendering performance by more than 50%.

In addition to his engineering roles, Mr. Alves served as a technical mentor for Lighthouse Labs, where he provided software engineering instruction and professional guidance to approximately twenty students per month. Through this work, he helped train and develop future technology professionals by teaching programming, software architecture, database management, and modern web application development. His involvement in technical education demonstrates both his leadership capabilities and commitment to workforce development within the technology sector.

Mr. Alves also possesses substantial expertise in cloud computing and infrastructure engineering. As a DevOps and Cloud Engineer, he designed and implemented highly automated cloud environments utilizing Amazon Web Services (AWS), Microsoft Azure, Kubernetes, Docker, Terraform, and Infrastructure-as-Code methodologies. His projects included the deployment of containerized applications, implementation of continuous integration and continuous delivery (CI/CD) pipelines, automation of infrastructure provisioning, cloud security configuration, disaster recovery preparation, and orchestration of large-scale production environments. These experiences provided him with extensive knowledge of the technologies that underpin modern digital infrastructure and enterprise software ecosystems.

His leadership experience was further strengthened during his tenure as Software Engineering Manager at Soluti, where he managed multidisciplinary engineering initiatives involving software architecture, infrastructure management, operational automation, and development workflow optimization. Under his leadership, engineering teams implemented architectural improvements that reduced system deployment timelines from thirty days to only two days, while introducing modern containerization and monitoring practices that significantly improved operational efficiency and system observability.

Mr. Alves' career reflects more than fifteen years of progressive technical advancement across the software industry. Earlier in his trajectory, he served as a Lead PHP Architect at Indra, a multinational technology and information-systems company, before advancing into full-stack product and cloud-engineering roles. As a Developer at Bold Commerce, he built high-impact e-commerce features for merchants on the Shopify platform, integrated payment providers such as Stripe and Braintree, and led a major platform-modernization effort. As a freelance DevOps and Cloud Engineer for Auvo Tecnologia, he designed and deployed Kubernetes infrastructure on Amazon Web Services using service-mesh architecture, automated certificate management, and infrastructure-as-code practices. This progression, from software development to systems architecture, cloud engineering, and technical leadership, established the multidisciplinary foundation that Mr. Alves brings to the leadership of Vertex Digital Systems LLC.

Mr. Alves possesses advanced expertise in artificial intelligence technologies, including large language model integration, retrieval-augmented generation (RAG), AI agents, intelligent workflow automation, prompt engineering, and enterprise AI implementation. He has practical experience developing AI-powered applications capable of automating information retrieval, document processing, content generation, and business decision-support functions. This specialized knowledge positions him to help organizations successfully adopt artificial intelligence technologies while improving productivity and operational performance.

His technical competencies also include cloud architecture, microservices design, event-driven systems, API development, database engineering, cybersecurity best practices, identity and access management, application monitoring, and enterprise system integration. He has extensive experience working with AWS, Microsoft Azure, Google Cloud Platform, Kubernetes, Terraform, Docker, GitHub Actions, GitLab CI, and a broad range of modern software development and infrastructure technologies used by leading organizations worldwide.

Academically, Mr. Alves holds a Postgraduate Degree in Computer Networks and Security from the Federal University of Goiás and an Associate Degree in Network Communications from the Federal Institute of Goiás. He is also a Zend Certified Engineer, a globally recognized credential that validates advanced software development expertise. These academic qualifications complement his extensive practical experience and reinforce his ability to lead complex technology initiatives.

As Founder, General Manager, and AI Solutions Director of Vertex Digital Systems LLC, Mr. Alves will leverage his extensive background in software engineering, artificial intelligence, cloud infrastructure, automation technologies, and enterprise systems development to deliver advanced technology solutions that help U.S. businesses improve productivity, modernize operations, strengthen digital infrastructure, and accelerate the adoption of emerging technologies. His combination of technical expertise, leadership experience, and proven success in delivering scalable technology solutions uniquely positions him to lead the company's growth and contribute to the advancement of innovation and digital competitiveness within the United States.

2.0 The Company

Vertex Digital Systems LLC will progressively expand its workforce to support increasing demand for artificial intelligence implementation, software development, cloud infrastructure modernization, business process automation, and intelligent data solutions. As organizations continue to invest in digital transformation initiatives, the company will build a multidisciplinary team capable of delivering scalable technology solutions while maintaining high standards of quality, security, and operational efficiency.

By Year 5, the company is expected to employ a team of specialized professionals responsible for software engineering, artificial intelligence development, cloud infrastructure management,

DevOps operations, automation technologies, project coordination, customer support, and business development activities. This organizational structure will enable Vertex Digital Systems LLC to execute multiple projects simultaneously while supporting long-term client relationships and sustained business growth.

The projected team structure by the fifth year of operations will include:

- **General Manager & AI Solutions Director – Mr. Guilherme Pereira da Silva Alves:** Mr. Alves will oversee the company's strategic direction, technology initiatives, service delivery operations, and business development efforts. He will lead the design and implementation of artificial intelligence solutions, cloud architectures, automation frameworks, and software platforms while ensuring that projects meet technical, operational, and business objectives.
- **2 Software Developers (Full-Stack Developers):** These professionals will develop and maintain custom software applications, SaaS platforms, APIs, and enterprise systems. Their responsibilities will include front-end and back-end development, database integration, application maintenance, performance optimization, and implementation of scalable software architectures.
- **3 AI Solutions Engineers:** AI Solutions Engineers will design, develop, and deploy artificial intelligence applications, intelligent automation systems, AI-powered assistants, large language model integrations, retrieval-augmented generation (RAG) platforms, and workflow automation solutions that improve business productivity and operational efficiency.
- **3 Cloud Infrastructure Engineers:** These professionals will design, implement, and manage cloud and hybrid infrastructure environments. Their responsibilities will include cloud migrations, Infrastructure-as-Code implementation, Kubernetes administration, cloud security management, infrastructure optimization, disaster recovery planning, and scalability enhancement initiatives.
- **2 DevOps Engineers:** DevOps Engineers will develop and maintain CI/CD pipelines, deployment automation frameworks, monitoring environments, infrastructure orchestration systems, and software delivery processes. Their work will support operational reliability, faster deployment cycles, and improved system stability.
- **2 Project Coordinators:** Project Coordinators will manage project schedules, facilitate communication between technical teams and clients, monitor deliverables, coordinate resources, maintain project documentation, and ensure that implementation milestones are achieved according to established timelines.
- **2 Data & Automation Engineers:** These professionals will develop intelligent data processing systems, automated business workflows, analytics platforms, enterprise integrations, and business intelligence environments. They will support data-driven decision-making while improving operational visibility and process efficiency.
- **2 Sales Representatives:** Sales Representatives will be responsible for client acquisition, relationship development, lead generation, proposal support, and promotion of the

company's technology services. They will help expand the company's customer base and identify opportunities within organizations seeking digital transformation, AI implementation, and infrastructure modernization solutions.

- **1 Administrative Manager:** The Administrative Manager will oversee financial administration, operational support functions, internal procedures, vendor management, documentation control, compliance activities, and human resources coordination to ensure efficient business operations.
- **2 Customer Service Representatives:** Customer Service Representatives will support ongoing client communication, coordinate service requests, facilitate issue resolution, assist with solution adoption, and help maintain high levels of customer satisfaction throughout project implementation and post-deployment support activities.

Under Mr. Alves' leadership, Vertex Digital Systems LLC will maintain a strong focus on technical excellence, continuous innovation, professional development, and customer satisfaction. The company will invest in workforce training and emerging technologies to ensure its team remains capable of addressing evolving business challenges and technology requirements.

By building a highly skilled workforce specializing in artificial intelligence, software engineering, cloud infrastructure, automation, and digital transformation technologies, Vertex Digital Systems LLC will strengthen its ability to support organizations across the United States while contributing to workforce development, technology adoption, and economic growth within the U.S. digital economy.

2.1 Company's Target

Vertex Digital Systems LLC will serve organizations seeking to improve operational efficiency, modernize technology environments, adopt artificial intelligence solutions, and strengthen digital infrastructure. The company will provide specialized services in artificial intelligence implementation, software development, cloud infrastructure modernization, business process automation, and intelligent data solutions that help organizations increase productivity, reduce operational costs, and accelerate digital transformation initiatives.

As businesses across the United States increasingly rely on digital technologies to manage operations, analyze information, automate workflows, and support customer engagement, many organizations face challenges associated with legacy systems, fragmented technology environments, limited automation capabilities, and shortages of specialized technical expertise. Vertex Digital Systems LLC will address these challenges by delivering scalable technology solutions that improve system performance, operational visibility, and organizational agility.

By implementing AI-powered systems, cloud-native applications, automation frameworks, and intelligent data platforms, the company will help organizations modernize operations, improve decision-making processes, and strengthen their ability to compete in technology-driven markets.

Primary Market Focus

1. Small and Medium-Sized Businesses (SMEs)

Small and medium-sized businesses represent a significant portion of the U.S. economy and increasingly depend on technology to support daily operations, customer engagement, financial management, and business growth. However, many SMEs lack the internal resources required to implement advanced technologies such as artificial intelligence, cloud infrastructure, and enterprise automation systems.

Vertex Digital Systems LLC will support these organizations through the development of custom software applications, AI-enabled automation solutions, cloud modernization projects, and intelligent business platforms. These services will help SMEs improve productivity, streamline operations, reduce manual processes, and enhance their ability to scale efficiently.

Secondary Market Focus

2. Technology-Driven Businesses and SaaS Companies

Technology-focused organizations and software providers require reliable, scalable, and continuously evolving digital environments to support their operations and customer bases. These companies often seek specialized expertise in software architecture, cloud infrastructure, DevOps, artificial intelligence integration, and platform optimization.

Vertex Digital Systems LLC will assist these organizations by developing scalable software solutions, modernizing application architectures, optimizing cloud environments, implementing deployment automation, and integrating AI capabilities that improve product functionality and operational efficiency.

3. Organizations Modernizing Legacy Systems

Many businesses continue to rely on outdated software platforms and infrastructure environments that limit operational efficiency, increase maintenance costs, and restrict integration with modern technologies. These legacy systems often create barriers to innovation and reduce an organization's ability to respond to changing market conditions.

Vertex Digital Systems LLC will help organizations modernize legacy applications through software refactoring, cloud migration initiatives, infrastructure upgrades, API development, and technology modernization strategies that improve scalability, maintainability, security, and long-term performance.

4. Data-Driven Organizations and Digital Operations

Organizations that manage significant volumes of operational, customer, transactional, or business intelligence data require reliable systems capable of collecting, processing, analyzing, and utilizing information efficiently. These businesses depend on advanced technology

platforms to support decision-making, operational visibility, regulatory compliance, and performance optimization.

Vertex Digital Systems LLC will develop intelligent data platforms, automation systems, analytics environments, AI agents, and enterprise integration solutions that improve data accessibility, automate information processing, and enable organizations to leverage data more effectively for strategic and operational purposes.

5. Businesses Seeking Artificial Intelligence Adoption

Organizations across virtually every industry are exploring opportunities to integrate artificial intelligence into their operations to improve productivity, automate repetitive tasks, enhance customer service, and optimize decision-making processes. However, many businesses lack the expertise necessary to implement AI technologies effectively and securely.

Vertex Digital Systems LLC will support AI adoption initiatives through the implementation of AI-powered assistants, large language model integrations, retrieval-augmented generation (RAG) systems, intelligent workflow automation, and custom AI applications designed to address specific operational requirements. These solutions will help organizations realize measurable productivity gains while accelerating the adoption of emerging technologies within their operations.

Through these target markets, Vertex Digital Systems LLC will support digital modernization, technology adoption, workforce productivity improvements, and operational innovation across multiple sectors of the U.S. economy, contributing to broader efforts to strengthen technological competitiveness and economic growth.

2.2 Needs for the Company's Services

The rapid adoption of artificial intelligence, cloud computing, automation technologies, and digital platforms has transformed how organizations operate across the United States. Businesses increasingly depend on software systems, cloud infrastructure, intelligent data platforms, and automated workflows to improve productivity, manage operations, enhance customer experiences, and maintain competitiveness in a technology-driven economy.

Despite these advances, many organizations continue to face significant challenges when implementing and managing modern technology environments. Small and medium-sized businesses, in particular, often lack the specialized expertise required to deploy artificial intelligence solutions, modernize legacy systems, optimize cloud infrastructure, automate business processes, and effectively utilize organizational data. Under the leadership of Mr. Guilherme Pereira da Silva Alves, Vertex Digital Systems LLC will address these challenges by delivering advanced technology solutions that help organizations improve operational efficiency, strengthen digital capabilities, and accelerate technology adoption.

1. Limited Adoption of Artificial Intelligence and Automation

Artificial intelligence has emerged as one of the most important technologies driving productivity and innovation across industries.[4] However, many organizations struggle to identify practical applications for AI, integrate AI systems into existing workflows, and deploy solutions that generate measurable business value.

Vertex Digital Systems LLC will help organizations implement AI-powered solutions, intelligent automation systems, AI agents, and large language model integrations that automate repetitive tasks, improve information accessibility, streamline operations, and support faster decision-making processes.

2. Legacy Systems and Technology Modernization Challenges

Many businesses continue to operate outdated software platforms and infrastructure environments that limit scalability, increase maintenance costs, and reduce operational efficiency.[5] Legacy technologies often create barriers to innovation and prevent organizations from adopting modern digital capabilities.

Vertex Digital Systems LLC will support modernization initiatives through software redevelopment, cloud migration projects, infrastructure upgrades, application refactoring, and API integration strategies that improve performance, security, scalability, and long-term maintainability.

3. Growing Demand for Cloud Infrastructure and Operational Resilience

As organizations increasingly rely on digital operations, the need for scalable, secure, and reliable cloud infrastructure continues to grow.[6] Many businesses lack the internal expertise necessary to design and manage modern cloud environments capable of supporting evolving operational requirements.

Vertex Digital Systems LLC will assist organizations in deploying and optimizing cloud and hybrid infrastructure environments through Infrastructure-as-Code implementation, containerized architectures, Kubernetes orchestration, cloud security enhancements, disaster recovery planning, and performance optimization initiatives.

4. Inefficient Software Delivery and Operational Processes

Many organizations experience delays in software deployment, inconsistent release processes, and operational inefficiencies caused by manual infrastructure management and fragmented development workflows.[7] These challenges increase costs and reduce organizational agility.

[4] https://www.sciencedirect.com/science/article/pii/S2773207X24001386
[5] https://www.ibm.com/solutions/automation
[6] https://www.avepoint.com/solutions/cloud-transformation-modernization
[7] https://www.ibm.com/solutions/automation

Vertex Digital Systems LLC will implement DevOps methodologies, CI/CD pipelines, deployment automation frameworks, monitoring environments, and infrastructure orchestration systems that improve software delivery speed, operational reliability, and technology management efficiency.

5. Underutilization of Business Data

Organizations generate and collect large volumes of operational, customer, and business intelligence data, yet many struggle to transform this information into actionable insights. Fragmented systems, manual reporting processes, and limited analytics capabilities often restrict effective decision-making.

Vertex Digital Systems LLC will develop intelligent data platforms, analytics environments, enterprise integrations, and AI-powered information systems that enable organizations to collect, process, analyze, and utilize data more effectively. These solutions will improve operational visibility, support strategic planning, and strengthen data-driven decision-making capabilities.

2.3 Company's Expansion

Dallas, Texas provides a strong foundation for the growth of Vertex Digital Systems LLC due to its expanding technology sector, concentration of innovative businesses, access to skilled technology professionals, and increasing demand for artificial intelligence, cloud computing, automation, and software modernization services. From this strategic location, the company will implement a phased expansion strategy focused on increasing service capabilities, expanding its client base, developing a highly skilled workforce, and strengthening its role in the U.S. technology ecosystem.

1. Service Expansion

Vertex Digital Systems LLC will initially focus on its core services, including Artificial Intelligence Integration and Business Process Automation, Custom Software and SaaS Platform Development, Cloud Infrastructure Modernization and Deployment, DevOps and Software Delivery Optimization, and Intelligent Data Platforms and AI Agent Development.

As the company grows, it will expand its ability to deliver larger and more sophisticated technology projects involving enterprise automation, advanced AI implementations, cloud-native applications, intelligent data ecosystems, and scalable digital transformation initiatives. This expansion will allow the company to serve a broader range of industries while addressing increasingly complex operational and technological challenges.

2. Geographic Expansion

Although headquartered in Dallas, Vertex Digital Systems LLC will operate using a flexible service delivery model that combines remote collaboration, cloud-based project management, and

direct client engagement when required. This approach will allow the company to provide services throughout the United States without significant geographic limitations.

As its client portfolio expands, the company intends to strengthen its presence in major technology and business markets where demand for artificial intelligence adoption, cloud modernization, and digital transformation services continues to grow. This nationwide reach will enable Vertex Digital Systems LLC to support organizations across multiple sectors of the U.S. economy.

3. Workforce Development and Job Creation

To support operational growth, Vertex Digital Systems LLC will progressively expand its workforce by hiring Software Developers, AI Solutions Engineers, Cloud Infrastructure Engineers, DevOps Engineers, Data & Automation Engineers, Project Coordinators, Sales Representatives, Customer Service Representatives, and administrative personnel.

This workforce expansion will strengthen the company's ability to deliver specialized technology solutions while creating high-skilled employment opportunities in fields that are critical to the continued advancement of the U.S. technology sector. The company will emphasize continuous professional development, technical training, and emerging technology expertise to maintain a highly qualified team capable of supporting evolving industry demands.

4. Strategic Partnerships and Industry Collaboration

Vertex Digital Systems LLC will actively pursue strategic relationships with technology providers, cloud service platforms, software vendors, startup ecosystems, educational institutions, and organizations involved in digital innovation initiatives. These partnerships will support knowledge sharing, access to emerging technologies, collaborative project opportunities, and expanded market visibility.

The company will also seek opportunities to participate in technology-focused initiatives that promote artificial intelligence adoption, workforce development, software innovation, and digital modernization throughout the United States.

5. Continuous Innovation and Technology Advancement

Technology evolves rapidly, requiring organizations to continuously adapt to new tools, frameworks, and operational models. As part of its long-term growth strategy, Vertex Digital Systems LLC will invest in ongoing research, technology evaluation, and professional development activities to remain at the forefront of artificial intelligence, cloud computing, automation, and software engineering advancements.

The company will continuously refine its development methodologies, cloud infrastructure practices, AI implementation frameworks, and automation capabilities to ensure that clients benefit from efficient, secure, scalable, and future-ready technology solutions.

Long-Term Growth Outlook

Through this structured expansion strategy, Vertex Digital Systems LLC aims to become a recognized provider of artificial intelligence solutions, software engineering services, cloud infrastructure modernization, and intelligent automation technologies within the United States. Under the leadership of Mr. Guilherme Pereira da Silva Alves, the company will support organizations seeking to improve productivity, modernize operations, strengthen digital capabilities, and leverage emerging technologies to remain competitive in a rapidly evolving economy.

By expanding its service offerings, creating high-skilled jobs, fostering innovation, and supporting the adoption of advanced technologies, Vertex Digital Systems LLC will contribute to the continued growth of the U.S. digital economy and the development of a more productive, technology-enabled business environment.

2.4 Company's Economic Benefits

Under the leadership of Mr. Guilherme Pereira da Silva Alves, Vertex Digital Systems LLC is projected to achieve consistent financial growth while contributing to technological advancement, workforce development, business productivity, and economic activity throughout the United States. The company's financial projections reflect the increasing demand for artificial intelligence implementation, cloud infrastructure modernization, software development, automation technologies, and intelligent data solutions among organizations seeking to improve operational efficiency and competitiveness.

During its first year of operation, Vertex Digital Systems LLC is expected to generate approximately $637,000 in revenue, reflecting the initial demand for Artificial Intelligence Integration and Business Process Automation, Custom Software and SaaS Platform Development, Cloud Infrastructure Modernization and Deployment, DevOps and Software Delivery Optimization, and Intelligent Data Platforms and AI Agent Development services. As the company expands its client base, service capacity, and technical workforce, revenues are projected to grow steadily, reaching approximately $3.66 million by the fifth year.

This growth is supported by a scalable business model centered on technology services, recurring software development projects, cloud infrastructure initiatives, artificial intelligence deployments, and automation solutions. Gross margins are projected to increase from $586,040 in Year 1 to approximately $3.37 million in Year 5, reflecting the efficiency, scalability, and increasing market demand associated with advanced technology services. Net profits are also expected to grow steadily, rising from approximately $86,406 in the first year to $677,547 by Year 5.

In addition to direct financial performance, Vertex Digital Systems LLC will contribute to government revenues through federal, state, and payroll tax payments. Over the five-year projection period, the company is expected to generate approximately $1.25 million in total tax

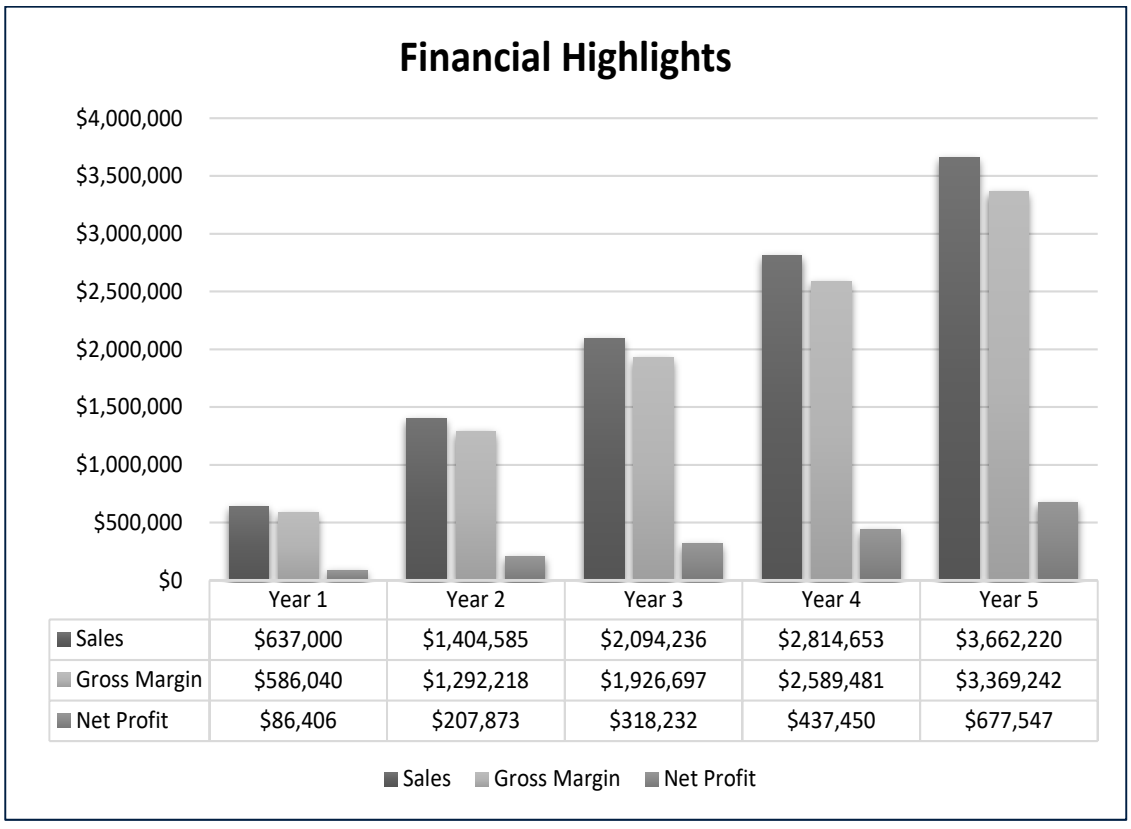
contributions, including $638,943 in federal and state taxes and $617,623 in payroll-related taxes.

Beyond its direct financial contributions, the company will support economic growth by helping businesses adopt artificial intelligence technologies, modernize software systems, automate operational processes, strengthen cloud infrastructure, and improve the utilization of organizational data.

As the company expands its workforce over the first five years of operation, it will create 20 high-skilled employment opportunities in fields such as software engineering, artificial intelligence development, cloud infrastructure engineering, DevOps operations, data and automation engineering, project management, sales, customer support, and business administration. These positions will contribute to the continued development of the U.S. technology workforce while supporting innovation and digital transformation initiatives nationwide.

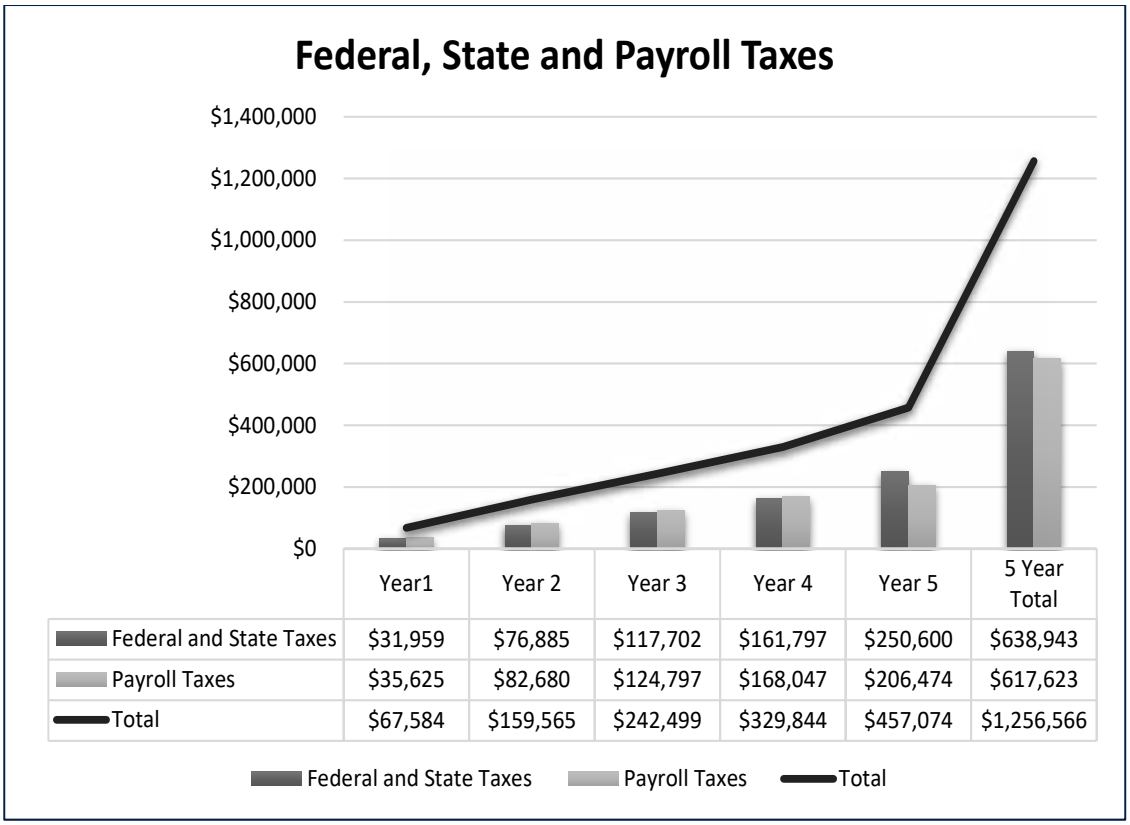
In summary, Vertex Digital Systems LLC's projected financial performance, job creation, tax contributions, and technology-driven services position the company as a growing contributor to the U.S. digital economy.

2.4.1 Financial Highlights Chart



	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	$637,000	$1,404,585	$2,094,236	$2,814,653	$3,662,220
Gross Margin	$586,040	$1,292,218	$1,926,697	$2,589,481	$3,369,242
Net Profit	$86,406	$207,873	$318,232	$437,450	$677,547

2.4.2 Federal, State and Payroll Taxes Chart



	Year1	Year 2	Year 3	Year 4	Year 5	5 Year Total
Federal and State Taxes	$31,959	$76,885	$117,702	$161,797	$250,600	$638,943
Payroll Taxes	$35,625	$82,680	$124,797	$168,047	$206,474	$617,623
Total	$67,584	$159,565	$242,499	$329,844	$457,074	$1,256,566

2.5 Summary of Investment

Vertex Digital Systems LLC will be launched with an initial investment of **$70,000**, funded through personal capital provided by Mr. Guilherme Pereira da Silva Alves. This investment will support the establishment of the company's operational infrastructure, technology environment, business development activities, and working capital requirements necessary to launch and expand a technology business focused on artificial intelligence solutions, software engineering, cloud infrastructure modernization, automation technologies, and intelligent data platforms.

Of the total investment, approximately **$52,000** will be allocated to startup expenses required to establish the company's operations and support the delivery of its technology services. These expenditures include business formation and compliance costs, accounting and tax setup, business insurance, technology infrastructure, software development resources, marketing initiatives, and office equipment necessary to support daily operations.

A significant portion of the investment will be dedicated to acquiring computers, workstations, software licenses, development tools, and cloud infrastructure services that are essential for software engineering, artificial intelligence development, cloud deployment, infrastructure management, automation projects, and data platform implementation. These resources will enable the company to design, develop, test, deploy, and maintain advanced technology solutions for clients across the United States.

Additional funding will support branding, website development, digital marketing activities, and business development initiatives aimed at establishing Vertex Digital Systems LLC within the U.S. technology market and generating early client acquisition opportunities. These investments will help the company build market visibility, strengthen customer outreach efforts, and support long-term revenue growth.

The remaining **$18,000** will be maintained as working capital to provide financial flexibility during the company's early operational stages. These funds will support payroll obligations, project implementation activities, cloud service expenses, operational costs, and business development efforts while the company establishes its client base and expands revenue-generating activities.

This investment structure provides Vertex Digital Systems LLC with the financial resources necessary to establish a strong operational foundation while supporting sustainable growth and service expansion. Through this financial commitment, Mr. Alves demonstrates his intention to build a technology-driven enterprise that contributes to artificial intelligence adoption, digital modernization, cloud infrastructure advancement, workforce development, and technological innovation throughout the United States.

2.5.1 Startup Requirements Table

Startup	
Requirements	
Startup Expenses	
Business Registration, Legal & Licensing	$3,500
Accounting and Tax Setup	$2,500
Business Insurance	$2,000
Website Development and Branding	$6,000
Marketing and Advertising (Initial Campaigns)	$6,000
Computers, Workstations, and IT Equipment	$12,000
Software Licenses and Development Tools	$10,000
Cloud Infrastructure and Hosting Setup	$6,000
Office Equipment and Furniture	$4,000
Total Startup Expenses	$52,000
Startup Assets	
Cash Required	$18,000
Startup Inventory	$0
Other Current Assets	$0
Long-term Assets	$0
Total Assets	$18,000
Total Requirements	**$70,000**

3.0 Company's Services

Vertex Digital Systems LLC will provide specialized technology services focused on artificial intelligence implementation, software engineering, cloud infrastructure modernization, automation solutions, and intelligent data platforms. The company will help organizations improve operational efficiency, modernize technology environments, strengthen digital capabilities, and accelerate the adoption of emerging technologies that support long-term business growth.

As businesses increasingly rely on software systems, cloud infrastructure, data analytics, and artificial intelligence to manage operations and maintain competitiveness, the demand for scalable, secure, and intelligent technology solutions continues to expand. Vertex Digital Systems LLC will address these needs by delivering practical solutions that improve productivity, automate workflows, enhance decision-making, and optimize digital operations.

The company will offer the following core services:

1. Artificial Intelligence Integration and Business Process Automation

Vertex Digital Systems LLC will develop and implement artificial intelligence solutions designed to automate repetitive tasks, improve operational workflows, and increase organizational productivity. These solutions will help businesses leverage AI technologies to streamline processes, improve information accessibility, and enhance operational decision-making.

Key activities include:

- Development of AI-powered assistants and intelligent automation tools
- Integration of Large Language Models (LLMs) into business processes
- Workflow automation and process optimization initiatives
- Development of Retrieval-Augmented Generation (RAG) solutions
- AI-powered document processing and information management systems
- Design of intelligent operational support platforms and AI agents

2. Custom Software and SaaS Platform Development

The company will design, develop, and maintain custom software applications and SaaS platforms tailored to the operational needs of businesses across multiple industries. These solutions will improve operational efficiency, support scalability, and facilitate digital transformation initiatives.

Key activities include:

- Development of custom web and enterprise applications
- SaaS platform architecture and implementation
- API development and system integration services
- Modernization of existing software applications

- Development of cloud-native and scalable software environments
- Database design, optimization, and application integration

3. Cloud Infrastructure Modernization and Deployment

Vertex Digital Systems LLC will assist organizations in designing, deploying, and optimizing cloud and hybrid infrastructure environments that support business growth, operational resilience, and technology modernization efforts.

Key activities include:

- Cloud migration planning and implementation
- Infrastructure-as-Code (IaC) deployment and automation
- Kubernetes and containerized environment implementation
- Cloud architecture design and optimization
- Disaster recovery and business continuity planning
- Cloud security configuration and infrastructure monitoring

4. DevOps and Software Delivery Optimization

The company will implement DevOps methodologies and automation frameworks that improve software development efficiency, deployment reliability, and operational performance. These services will help organizations accelerate software delivery while maintaining stability and security.

Key activities include:

- Development and management of CI/CD pipelines
- Deployment automation and release management
- Infrastructure orchestration and configuration management
- Monitoring, observability, and performance management solutions
- Software lifecycle optimization and development workflow improvement
- Environment standardization and operational automation initiatives

5. Intelligent Data Platforms and AI Agent Development

Vertex Digital Systems LLC will develop intelligent data systems that enable organizations to collect, process, analyze, and utilize information more effectively. These solutions will support data-driven decision-making, improve operational visibility, and enhance business intelligence capabilities.

Key activities include:

- Development of AI agents for operational and analytical functions
- Intelligent data extraction and processing solutions
- Business intelligence and analytics platform implementation
- Enterprise data integration and information management systems

- Predictive analytics and decision-support environments
- Development of centralized knowledge management and information retrieval platforms

Through these services, Vertex Digital Systems LLC will help organizations modernize technology environments, improve workforce productivity, strengthen digital infrastructure, accelerate artificial intelligence adoption, and increase operational efficiency. By delivering scalable and innovative technology solutions, the company will support digital transformation efforts across multiple sectors of the U.S. economy while contributing to technological advancement and economic competitiveness.

4.0 Industry Overview

The artificial intelligence, software engineering, cloud computing, and digital transformation industry plays a critical role in supporting business innovation, productivity, and economic competitiveness throughout the United States. Organizations across virtually every sector increasingly depend on artificial intelligence systems, cloud-based platforms, automation technologies, intelligent data solutions, and modern software applications to manage operations, improve decision-making, enhance customer experiences, and maintain operational efficiency.

As businesses continue to modernize their operations, the demand for AI-powered solutions, cloud infrastructure, automation technologies, and scalable software systems has expanded significantly.[8] Organizations must continuously improve their technological capabilities to remain competitive, optimize workflows, reduce operational costs, and respond to evolving customer and market expectations. This trend has accelerated investments in artificial intelligence adoption, software modernization, cloud migration, and business process automation across both public and private sectors.

Small and medium-sized enterprises represent a significant portion of organizations seeking specialized software development services. Many of these businesses lack internal resources with specialized expertise in artificial intelligence implementation, cloud architecture, software engineering, data management, and DevOps operations.[9] As a result, technology firms that provide advanced development and infrastructure services play an important role in helping businesses adopt emerging technologies and improve operational performance.

In addition to increasing technology adoption, many organizations continue to rely on legacy software systems and outdated infrastructure environments that limit scalability, operational efficiency, and integration with modern technologies.[10] These environments often require

[8] https://www.forbes.com/councils/forbestechcouncil/2023/07/24/powering-the-growth-of-cloud-computing-infrastructure-challenges-and-solutions/

[9] https://www.mckinsey.com/mgi/our-research/a-microscope-on-small-businesses-spotting-opportunities-to-boost-productivity

[10] https://www.deloitte.com/us/en/insights/topics/digital-transformation/legacy-system-modernization.html

application modernization, cloud migration, infrastructure automation, and enhanced data management capabilities to support evolving business requirements. The need to modernize legacy systems continues to generate significant demand for specialized technology services capable of supporting long-term digital transformation initiatives.

The expansion of artificial intelligence technologies, cloud computing platforms, intelligent automation tools, and data-driven business operations has increased the complexity of modern technology environments.[11] Organizations increasingly depend on interconnected ecosystems that combine software applications, cloud services, enterprise data platforms, automated workflows, and AI-enabled solutions. Managing these environments effectively requires expertise in software architecture, cloud engineering, DevOps practices, data integration, automation frameworks, and artificial intelligence deployment.

Within this environment, companies that provide artificial intelligence implementation, software engineering, cloud modernization, DevOps optimization, and intelligent data solutions play a critical role in helping organizations improve productivity, strengthen operational resilience, and accelerate technology adoption. By implementing scalable technology platforms, automating business processes, modernizing infrastructure, and improving access to actionable data, these firms help organizations adapt to rapidly evolving technological and economic conditions.

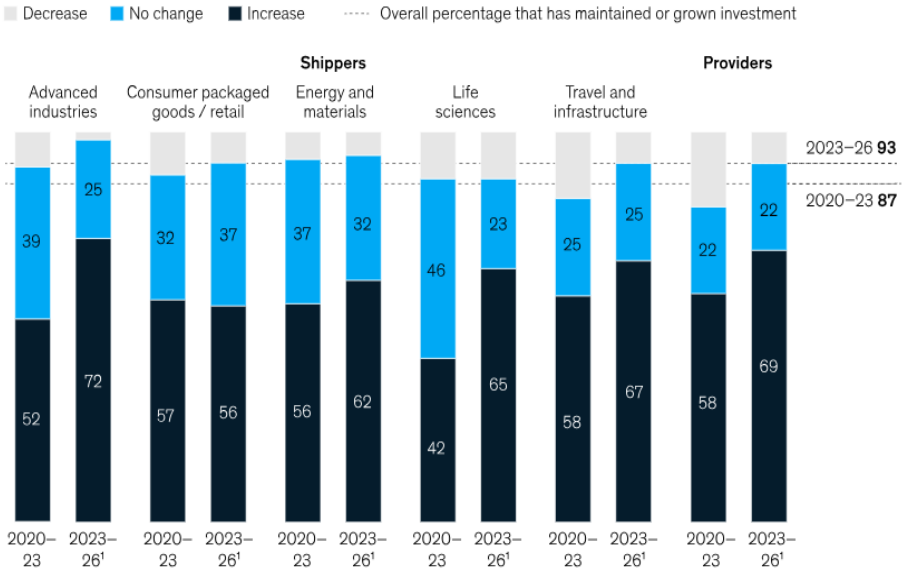
As digital transformation continues across industries such as healthcare, financial services, education, manufacturing, logistics, professional services, and e-commerce, demand for expertise in artificial intelligence, cloud infrastructure, intelligent automation, software modernization, and advanced data systems is expected to remain strong.[12] Companies capable of delivering these solutions will continue to support innovation, workforce productivity, operational efficiency, and technological advancement throughout the United States.

[11] https://www.forbes.com/sites/emilsayegh/2023/11/28/how-cloud-computing-revolutionized-business-operations-and-what-lies-ahead/

[12] https://www.mckinsey.com/capabilities/operations/our-insights/digital-logistics-technology-race-gathers-momentum

Investment in digital logistics has been strong across all sectors, and this trend is expected to continue.

Actual and expected investment in logistics technology type and shipping sector,[1] % of respondents



Note: Figures may not sum to 100%, because of rounding.
[1]Expected change in investment in logistics technology by 2026 by respondent type and sector.
Source: McKinsey Logistics Survey, conducted with 258 respondents (220 shippers, 38 providers), May 5–20, 2023

McKinsey & Company

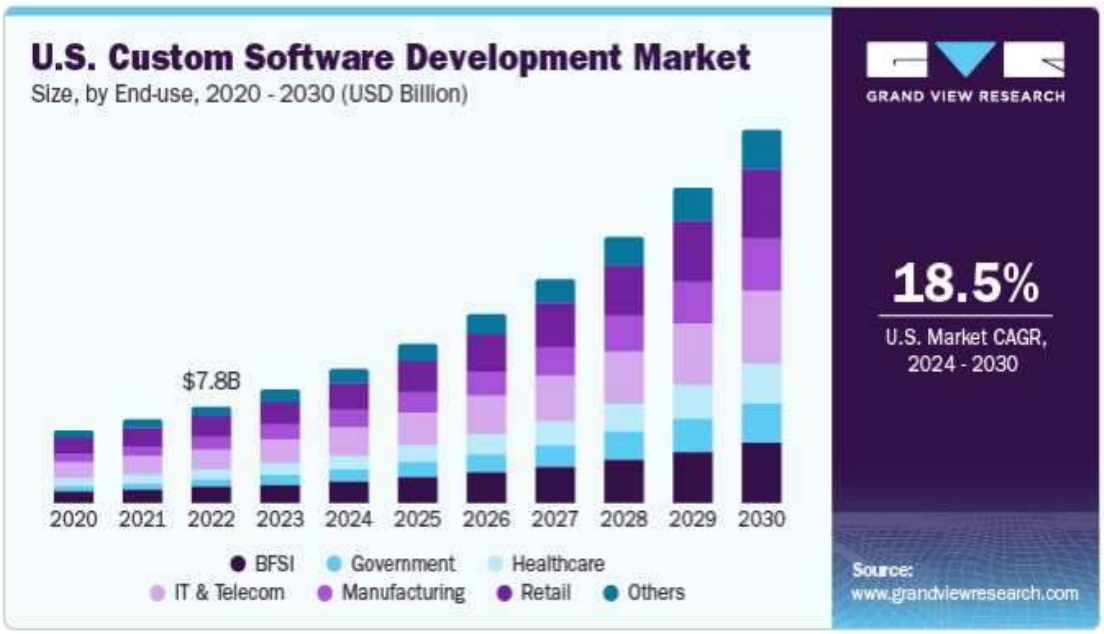
4.1 Industry Analysis

The artificial intelligence, software engineering, cloud computing, and digital transformation sector has become one of the fastest-growing segments of the U.S. economy. Organizations across virtually every industry are increasing investments in AI-powered solutions, cloud infrastructure, business automation technologies, intelligent data systems, and modern software platforms to improve productivity, competitiveness, and operational efficiency.

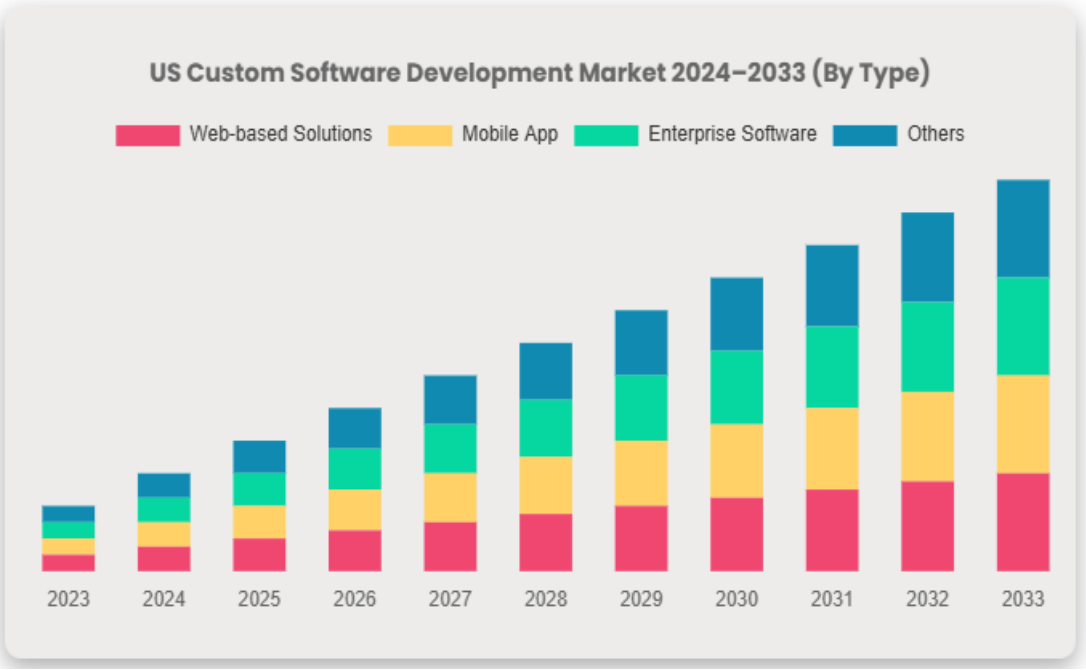
The demand for advanced technology services has expanded significantly as organizations seek practical ways to implement artificial intelligence, modernize software environments, automate business processes, migrate workloads to cloud platforms, and improve access to actionable business data. These initiatives have become essential for organizations seeking to increase efficiency, reduce operational costs, and remain competitive in rapidly evolving markets.

In the United States, the custom software development market was valued at approximately $9.08 billion in 2023, and it is projected to grow at a compound annual growth rate (CAGR) of approximately 18.5% between 2024 and 2030, reflecting the increasing reliance of businesses on specialized digital solutions. [13]

[13] https://www.grandviewresearch.com/industry-analysis/us-custom-software-development-market-report



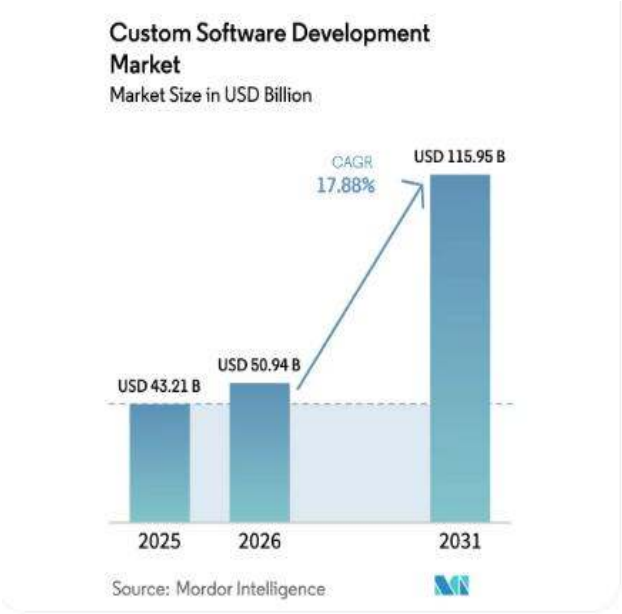
Other market studies indicate that the **U.S. custom software development market reached approximately $15.2 billion in 2024 and is projected to exceed $54.2 billion by 2033**, demonstrating strong long-term expansion driven by digital transformation initiatives and the growing need for customized business applications.[14]



Globally, the custom software development industry is also experiencing rapid growth. Market estimates indicate that the sector may exceed **$115 billion by 2031**, with annual growth rates

[14] https://www.custommarketinsights.com/report/us-custom-software-development-market/

approaching 17–18%, supported by increasing adoption of cloud technologies, artificial intelligence, and data-driven enterprise systems.[15]



Market Overview	
Study Period	2020 - 2031
Market Size (2026)	USD 50.94 Billion
Market Size (2031)	USD 115.95 Billion
Growth Rate (2026 - 2031)	17.88% CAGR
Fastest Growing Market	Asia Pacific
Largest Market	North America
Market Concentration	Medium

Major Players

accenture, Capgemini, HCL, TCS TATA CONSULTANCY SERVICES, Chetu

*Disclaimer: Major Players sorted in no particular order

Artificial intelligence has emerged as one of the most significant drivers of technology investment in the United States. According to PwC, AI technologies could contribute up to $15.7 trillion to the global economy by 2030,[16] while U.S. organizations continue to accelerate investments in generative AI, intelligent automation, predictive analytics, and AI-powered decision-support systems. Businesses increasingly view AI adoption as a strategic priority for improving productivity, reducing repetitive workloads, enhancing customer service, and strengthening competitiveness.

Several key factors are driving this expansion:

• **Digital transformation across industries:** Organizations are increasingly investing in custom applications to modernize operations and improve efficiency.

• **Growing reliance on cloud-based platforms:** Businesses are adopting cloud infrastructure and web-based systems that require specialized software integration and development.

• **Demand for tailored solutions:** Custom software allows companies to design systems that match their operational workflows and unique business requirements.

• **Expansion of small and medium-sized enterprises (SMEs):** SMEs are increasingly investing in digital platforms to remain competitive, driving demand for specialized development services.

[15] https://www.mordorintelligence.com/industry-reports/custom-software-development-market
[16] https://mexicobusiness.news/tech/news/ai-increase-business-earnings-pwc

In particular, small and medium-sized businesses represent one of the fastest-growing segments of the custom software development market. Studies show that SME demand for custom software solutions is expected to grow at approximately 20% annually, as companies seek scalable digital tools to automate processes and improve operational performance. [17]

The increasing complexity of modern technology environments has further accelerated demand for specialized expertise in software engineering, cloud architecture, artificial intelligence implementation, data integration, and DevOps operations. Organizations increasingly rely on interconnected ecosystems that combine cloud platforms, enterprise software applications, automation technologies, analytics environments, and AI-enabled tools. Successfully managing these environments requires advanced technical capabilities that many organizations do not maintain internally.

Within this environment, companies capable of designing and implementing customized software platforms play a critical role in supporting the technological infrastructure that modern businesses depend upon. Firms operating in this sector help organizations modernize legacy systems, improve system interoperability, and develop digital environments capable of supporting growing operational demands.

As digital transformation continues across industries such as healthcare, financial services, manufacturing, logistics, education, professional services, and e-commerce, demand for artificial intelligence implementation, software modernization, cloud infrastructure services, intelligent automation, and advanced data solutions is expected to remain strong. Companies capable of delivering these technologies will continue to play an important role in supporting innovation, workforce productivity, operational efficiency, and long-term economic competitiveness throughout the United States.

4.2 Industry Products and Services

The artificial intelligence, software engineering, cloud computing, and digital transformation industry encompasses a broad range of products and services designed to help organizations improve operational efficiency, modernize technology environments, strengthen digital infrastructure, and enhance data-driven decision-making. As businesses increasingly rely on advanced technologies to support growth and competitiveness, demand for specialized technology services continues to expand across multiple sectors of the U.S. economy.

Artificial Intelligence Integration and Business Process Automation

Artificial intelligence has become one of the most rapidly expanding segments of the technology industry. Organizations are increasingly implementing AI-powered solutions to automate repetitive tasks, improve operational efficiency, enhance customer interactions, and support decision-making processes. Businesses are adopting technologies such as large language

[17] https://www.grandviewresearch.com/industry-analysis/us-custom-software-development-market-report

models, intelligent automation platforms, AI-powered assistants, and data-driven analytical systems to reduce manual workloads and improve productivity. The growing demand for practical AI applications continues to create significant opportunities for companies capable of implementing and integrating these technologies into business operations.

Custom Software and SaaS Platform Development

Custom software development remains a fundamental component of the technology services industry. Organizations frequently require software applications specifically designed to support their operational requirements, business objectives, and customer needs. These solutions include enterprise management systems, SaaS platforms, workflow automation applications, customer-facing digital tools, and integrated business platforms. Custom software enables organizations to improve operational efficiency, increase scalability, and implement solutions that align with their unique business processes.

Cloud Infrastructure Modernization and Deployment

Cloud computing has transformed the way organizations manage technology infrastructure and digital operations. Businesses increasingly migrate applications, databases, and operational workloads to cloud environments to improve scalability, reliability, security, and cost efficiency. Cloud modernization services support organizations in designing, deploying, optimizing, and managing cloud and hybrid infrastructure environments. These services have become critical as organizations seek greater operational flexibility and stronger digital resilience.

DevOps and Software Delivery Optimization

The growing complexity of software environments has increased demand for DevOps practices and software delivery optimization services. Organizations seek to accelerate software deployment cycles, improve development efficiency, and maintain stable operational environments through automation and process standardization. DevOps services support continuous integration, continuous delivery, deployment automation, infrastructure management, system monitoring, and operational reliability. These capabilities enable organizations to deliver software updates more efficiently while minimizing downtime and operational risks.

Intelligent Data Platforms and AI Agent Development

Organizations increasingly rely on data to support strategic planning, operational management, customer engagement, and business growth. As the volume and complexity of information continue to expand, businesses require intelligent platforms capable of collecting, processing, organizing, and analyzing data efficiently. Advanced data platforms, business intelligence environments, predictive analytics systems, and AI-powered agents help organizations transform information into actionable insights. These technologies improve decision-making, increase operational visibility, and enable organizations to respond more effectively to changing market conditions.

Industry Significance

Together, these products and services form the foundation of the modern technology services industry. By supporting artificial intelligence adoption, software modernization, cloud infrastructure advancement, business automation, and intelligent data utilization, technology providers contribute directly to productivity growth, operational efficiency, innovation, and economic competitiveness throughout the United States.

4.3 Business Location

Vertex Digital Systems LLC will be headquartered in Dallas, Texas, one of the fastest-growing technology and business centers in the United States. The Dallas–Fort Worth (DFW) metropolitan area offers a strong economic environment, a rapidly expanding technology ecosystem, and access to a highly skilled workforce, making it an advantageous location for companies specializing in artificial intelligence, software engineering, cloud computing, automation technologies, and digital transformation services.

The Dallas–Fort Worth metropolitan area is the fourth-largest metropolitan economy in the United States, with a regional GDP exceeding $744 billion in 2023, reflecting the region's strong business activity and diversified economic base.[18] The area continues to attract significant investments in technology infrastructure, advanced business services, cloud computing operations, and innovation-driven enterprises, creating a favorable environment for technology companies seeking long-term growth opportunities.

Dallas has emerged as one of the nation's leading technology employment hubs. The DFW region supports more than 380,000 technology jobs, placing it among the largest technology labor markets in the country. The presence of major technology companies, software firms, cloud service providers, data centers, startup accelerators, and innovation centers has generated increasing demand for advanced technology solutions, including artificial intelligence implementation, software modernization, cloud infrastructure management, automation systems, and data-driven business platforms.[19]

Texas itself is home to one of the largest technology sectors in the United States. According to the Texas Economic Development Corporation, the state employs more than 972,000 workers in technology-related occupations, making Texas the second-largest technology workforce in the nation. This concentration of technical talent provides Vertex Digital Systems LLC with access to professionals skilled in software engineering, artificial intelligence, cloud infrastructure, cybersecurity, data analytics, and DevOps operations.[20]

In addition to its strong technology workforce, Dallas provides a favorable business environment for emerging and growing companies. Texas consistently ranks among the nation's leading states

[18] https://www.bea.gov/data/gdp/gdp-metropolitan-area
[19] https://www.cyberstates.org
[20] https://businessintexas.com

for business growth due to its pro-business regulatory environment, absence of a state personal income tax, strong capital investment activity, and expanding entrepreneurial ecosystem. These factors support both business formation and technology innovation.[21]

The region is also home to a large concentration of small and medium-sized businesses operating across industries such as healthcare, logistics, financial services, professional services, manufacturing, and e-commerce. Many of these organizations are actively investing in artificial intelligence adoption, cloud modernization, business automation, and digital transformation initiatives to improve productivity and maintain competitiveness. This creates sustained demand for the technology services offered by Vertex Digital Systems LLC.

Dallas' central geographic location and advanced digital infrastructure further support nationwide service delivery. Modern telecommunications networks, cloud connectivity, and technology resources allow the company to collaborate efficiently with clients throughout the United States while providing remote implementation, support, and project management services.

By establishing operations in Dallas, Vertex Digital Systems LLC will benefit from:

- Access to one of the largest technology workforces in the United States
- Proximity to businesses actively investing in artificial intelligence, cloud computing, and digital transformation initiatives
- A diverse client base across multiple industries seeking technology modernization and automation solutions
- A strong regional economy that supports innovation, entrepreneurship, and technology investment
- A business-friendly regulatory and tax environment that encourages growth and workforce expansion

These factors make Dallas an ideal location for a company focused on artificial intelligence implementation, software engineering, cloud infrastructure modernization, business automation, and intelligent data solutions. The region provides the talent pool, business opportunities, and technology ecosystem necessary to support Vertex Digital Systems LLC's growth while enabling the company to contribute to innovation, workforce development, and digital transformation efforts throughout the United States.

5.0 Strategy and Implementation

The Strategy and Implementation section outlines how Vertex Digital Systems LLC will position itself within the artificial intelligence, software engineering, cloud computing, and digital transformation sectors while building long-term relationships with client organizations throughout the United States. Through a combination of technical expertise, targeted marketing

[21] https://www.cnbc.com/top-states-for-business/

initiatives, strategic partnerships, and a commitment to innovation, the company will focus on expanding its client base and establishing a reputation as a reliable provider of advanced technology solutions. The company's strategy is designed to support sustainable growth while addressing the increasing demand for artificial intelligence implementation, cloud modernization, automation technologies, intelligent data solutions, and custom software development services.

The following components will guide the company's strategy and implementation approach:

1. **SWOT Analysis:** Vertex Digital Systems LLC will conduct a comprehensive evaluation of its strengths, weaknesses, opportunities, and potential market challenges. This analysis will enable the company to identify competitive advantages such as expertise in artificial intelligence implementation, software engineering, cloud infrastructure modernization, DevOps optimization, and intelligent automation technologies. The SWOT assessment will also help management identify emerging market opportunities, evaluate competitive pressures, mitigate operational risks, and refine the company's strategic positioning within the rapidly evolving technology sector.
2. **Website:** The company's website will serve as a central platform for presenting Vertex Digital Systems LLC's services, technical capabilities, and industry expertise. The website will provide detailed information regarding artificial intelligence solutions, software engineering services, cloud infrastructure capabilities, automation technologies, and intelligent data platforms. In addition to showcasing the company's expertise, the website will function as a primary lead-generation tool, helping prospective clients understand the value of the company's services while facilitating communication and project inquiries.
3. **Digital Marketing:** Vertex Digital Systems LLC will implement a structured digital marketing strategy designed to reach organizations seeking advanced technology solutions. Marketing initiatives will include search engine optimization (SEO), targeted digital advertising campaigns, professional content development, email outreach initiatives, and educational materials focused on artificial intelligence adoption, cloud modernization, automation, and digital transformation. These efforts will increase brand visibility, generate qualified leads, and position the company as a trusted resource for businesses seeking to improve operational efficiency through technology.
4. **Social Media:** Professional networking platforms such as LinkedIn, along with other relevant social media channels, will be utilized to strengthen brand awareness and professional engagement. Vertex Digital Systems LLC will regularly share industry insights, technology trends, artificial intelligence developments, cloud computing updates, automation strategies, and company achievements. These platforms will help establish credibility within the technology community while creating opportunities to engage with prospective clients, technology professionals, strategic partners, and industry stakeholders.
5. **Industry Events and Networking:** Participation in technology conferences, artificial intelligence forums, cloud computing events, startup ecosystems, and professional

networking organizations will be an important component of the company's growth strategy. These activities will allow Vertex Digital Systems LLC to remain informed about emerging technologies, evolving market demands, and industry best practices. Industry events will also provide opportunities to establish relationships with business leaders, technology companies, investors, and organizations pursuing artificial intelligence adoption, cloud transformation, automation initiatives, and digital modernization projects.

6. **Referrals and Professional Relationships:** Client referrals and long-term professional relationships will play a significant role in the company's business development efforts. By delivering reliable, scalable, and results-oriented technology solutions, Vertex Digital Systems LLC will build trust with its clients and encourage referrals through professional networks. Successful project outcomes, strong communication, and measurable improvements in operational efficiency will support repeat business opportunities and long-term client retention. As the company expands its portfolio of successful implementations, referrals are expected to become an increasingly important source of new business opportunities.

In Sections 5.3 and 5.4, the company will further detail its sales strategy and projected sales performance. The sales strategy will describe how Vertex Digital Systems LLC plans to identify organizations seeking artificial intelligence implementation, cloud modernization, software engineering, automation solutions, and intelligent data capabilities, while establishing long-term business relationships that support ongoing technology advancement. The sales forecast will present financial projections based on anticipated market demand, industry growth trends, client acquisition objectives, and the company's planned expansion within the artificial intelligence, cloud computing, software engineering, and digital transformation sectors.

5.1 SWOT Analysis

A SWOT analysis provides an overview of the internal and external factors that may influence Vertex Digital Systems LLC's development within the software development and digital technology services industry. This analysis evaluates the company's strengths and weaknesses as well as external opportunities and potential market risks.

Strengths

- **Extensive Technical Expertise Across Multiple Disciplines:** The company benefits from Mr. Guilherme Pereira da Silva Alves' extensive experience in software engineering, artificial intelligence implementation, cloud infrastructure, DevOps, systems architecture, and enterprise application development.
- **Strong Artificial Intelligence Capabilities:** Vertex Digital Systems LLC offers expertise in AI integration, intelligent automation, large language models (LLMs), AI agents, prompt engineering, and retrieval-augmented generation (RAG) solutions, positioning the company within one of the fastest-growing technology segments.

- **Comprehensive Service Portfolio:** The company provides integrated solutions spanning artificial intelligence, custom software development, cloud infrastructure modernization, DevOps optimization, and intelligent data platforms, enabling clients to obtain multiple services from a single provider.
- **Cloud and Infrastructure Expertise:** Experience with AWS, Microsoft Azure, Kubernetes, Terraform, Docker, and Infrastructure-as-Code allows the company to support complex cloud environments and modernization initiatives.
- **Scalable Business Model:** The company can deliver services remotely throughout the United States, allowing for geographic flexibility and efficient client engagement without requiring extensive physical infrastructure.
- **Experience Supporting High-Growth Technology Environments:** Mr. Alves has contributed to SaaS platforms, enterprise software systems, AI-powered applications, and cloud-native environments serving large-scale operational needs.
- **Strong Focus on Operational Efficiency;** The company's services are designed to improve productivity, automate workflows, optimize software delivery, and reduce infrastructure costs for client organizations.
- **Growing Demand for Advanced Technology Solutions:** Vertex Digital Systems LLC operates within sectors experiencing strong demand, including artificial intelligence, cloud computing, automation technologies, and digital transformation services.

Weaknesses

- **Limited Brand Recognition During Initial Operations:** As a newly established company, Vertex Digital Systems LLC will initially compete against firms with established market visibility and existing client networks.
- **Dependence on Founder Expertise During Early Stages:** The company's technical leadership, service delivery, and strategic direction will initially rely heavily on Mr. Alves' expertise and involvement.
- **Limited Initial Workforce Capacity:** During the startup phase, available resources may limit the number of concurrent projects the company can undertake until additional personnel are hired.

Opportunities

- **Rapid Growth of Artificial Intelligence Adoption:** Organizations across industries are increasing investments in AI technologies to improve productivity, automate processes, and enhance decision-making capabilities.

- **Expanding Cloud Computing Market:** Businesses continue migrating applications and operational workloads to cloud environments, creating ongoing demand for cloud architecture and modernization services.
- **Growing Demand for Business Process Automation:** Organizations are increasingly seeking automation technologies to reduce manual tasks, improve efficiency, and lower operating costs.
- **Technology Modernization Initiatives Among SMEs:** Small and medium-sized businesses continue investing in software modernization, cloud migration, and digital transformation projects to remain competitive.
- **Increasing Need for Data-Driven Operations:** Organizations require intelligent data platforms and analytics solutions that improve business visibility and support strategic decision-making.
- **Rising Demand for DevOps and Infrastructure Automation:** Businesses seek faster software deployment cycles, improved operational reliability, and automated infrastructure management solutions.
- **Expansion of Remote Service Delivery Models:** The growing acceptance of remote technology services enables the company to serve clients nationwide without significant geographic constraints.
- **Technology Workforce Shortages:** Many organizations struggle to recruit specialized professionals in artificial intelligence, cloud computing, DevOps, and software engineering, creating opportunities for external technology service providers.

Threats

- **Intense Competition Within the Technology Sector:** The company will compete with established software firms, cloud service providers, AI-focused organizations, and independent technology professionals.
- **Rapid Technological Change:** Continuous advancements in artificial intelligence, cloud technologies, cybersecurity, and software development require ongoing investment in skills and technology adaptation.
- **Economic Uncertainty and Reduced Technology Spending:** Economic downturns or reductions in corporate technology budgets could delay digital transformation initiatives and impact demand for certain technology services.

5.2 Website and Digital Marketing

Vertex Digital Systems LLC will maintain a strong digital presence to establish credibility, showcase its technical capabilities, and attract organizations seeking artificial intelligence, software engineering, cloud modernization, automation, and data-driven technology solutions.

The company's website and digital marketing initiatives will serve as important channels for client acquisition and business development.

Website

The company's website will function as the primary platform for presenting its services, expertise, and technology capabilities. The website will communicate the company's focus on artificial intelligence implementation, cloud infrastructure, software development, automation technologies, and intelligent data solutions.

Key Features of the Website:

1. **Professional Design:** The website will feature a modern design that reflects the company's expertise in advanced technology solutions and digital transformation initiatives.
2. **Service Offerings:** Clear descriptions of the company's services will be provided, including artificial intelligence integration, custom software development, cloud modernization, DevOps services, automation solutions, and intelligent data platforms.
3. **Technical Content and Resources:** The company will publish articles, insights, and educational content related to artificial intelligence, cloud computing, software engineering, automation, and digital transformation trends.
4. **Contact and Inquiry Channels:** The website will include accessible communication channels, including inquiry forms, email contacts, and consultation request options.
5. **Mobile Optimization:** The platform will be fully responsive and optimized for desktop and mobile devices.
6. **Search Engine Optimization (SEO):** SEO best practices will be implemented to improve visibility among organizations seeking artificial intelligence, cloud infrastructure, software engineering, and automation services.

Digital Marketing

Vertex Digital Systems LLC will implement a targeted digital marketing strategy focused on increasing brand visibility and connecting with organizations pursuing technology modernization and operational improvement initiatives.

Components of Digital Marketing:

1. **Search Engine Optimization (SEO):** The company will optimize digital content around topics such as artificial intelligence, cloud computing, automation, software modernization, DevOps, and digital transformation.
2. **Pay-Per-Click (PPC) Advertising:** Targeted advertising campaigns may be implemented through search engines and professional networks to reach organizations seeking advanced technology solutions.
3. **Email Marketing:** Email campaigns will share company updates, technology insights, service information, and industry developments with prospective clients and professional contacts.

4. **Content Marketing:** The company will publish educational and industry-focused content related to artificial intelligence adoption, cloud modernization, software engineering, automation, and data-driven business operations.
5. **Professional Networking and Social Media:** Platforms such as LinkedIn will be used to engage with business leaders, technology professionals, and organizations interested in technology transformation initiatives.
6. **Analytics and Performance Monitoring:** Marketing performance will be monitored through analytical tools that evaluate website traffic, lead generation, user engagement, and campaign effectiveness.

Through the integration of a professional website and targeted digital marketing initiatives, Vertex Digital Systems LLC will strengthen its market presence and expand its reach among organizations seeking advanced technology solutions.

5.3 Sales Strategy

Vertex Digital Systems LLC will implement a structured sales strategy designed to establish long-term relationships with organizations seeking artificial intelligence implementation, cloud modernization, software engineering, automation technologies, and intelligent data solutions. The company's approach will focus on understanding client needs, delivering measurable business value, and building lasting professional relationships.

- **Understanding the Customer:** The company will continuously evaluate the needs of organizations pursuing digital transformation, operational automation, cloud migration, software modernization, and artificial intelligence adoption. This understanding will allow Vertex Digital Systems LLC to align solutions with each client's operational objectives and technology requirements.
- **Unique Value Proposition:** The company will differentiate itself through its expertise in artificial intelligence implementation, software engineering, cloud infrastructure, DevOps, automation technologies, and intelligent data systems. This multidisciplinary capability enables the delivery of scalable solutions that improve productivity and operational efficiency.
- **Relationship Building:** Developing long-term relationships will remain a central component of the company's growth strategy. By delivering reliable solutions and maintaining consistent communication, Vertex Digital Systems LLC will foster strong client relationships and repeat business opportunities.
- **Leveraging Professional Referrals:** Satisfied clients and successful project outcomes are expected to generate referrals through professional networks, creating additional opportunities for business growth.
- **Digital Engagement:** The company will utilize its website, professional networking platforms, educational content, and digital outreach initiatives to connect with organizations seeking technology modernization and innovation services.

- **Technical Sales Support:** Sales activities will be supported by professionals capable of communicating both the technical and business benefits of artificial intelligence solutions, cloud infrastructure projects, automation initiatives, and software development services.
- **Performance Metrics:** The company will evaluate sales effectiveness through metrics such as lead conversion rates, customer retention, project acquisition levels, referral activity, and client satisfaction indicators. These measurements will support continuous refinement of sales and business development efforts.

Through this structured sales strategy, Vertex Digital Systems LLC will expand its client base, strengthen professional relationships, and position itself as a trusted provider of artificial intelligence, software engineering, cloud modernization, automation, and intelligent data solutions throughout the United States.

5.4 Sales Forecast

Vertex Digital Systems LLC will generate revenue through a diversified portfolio of technology services focused on artificial intelligence implementation, software development, cloud modernization, DevOps optimization, and intelligent data solutions. The sales forecast reflects the company's gradual expansion within the U.S. technology market, supported by increasing demand for artificial intelligence adoption, cloud infrastructure modernization, automation technologies, and digital transformation initiatives.

The company projects steady growth in project volume and revenue as it expands its client base and service delivery capacity. Total annual projects are expected to increase from 38 projects in Year 1 to 180 projects in Year 5, while total revenue is projected to grow from approximately **$637,000** in Year 1 to approximately **$3.66 million** by Year 5. This growth reflects the increasing demand for advanced technology solutions that help organizations improve productivity, automate business processes, modernize infrastructure, and enhance data-driven operations.

- **Artificial Intelligence Integration and Business Process Automation** is projected to be the company's largest revenue-generating service line. Project volume is expected to increase from 10 projects in Year 1 to 48 projects in Year 5, generating revenue growth from approximately $200,000 to $1.16 million. Demand is expected to be driven by organizations seeking intelligent automation, AI-powered assistants, workflow optimization, and operational efficiency improvements.
- **Custom Software and SaaS Platform Development** will remain a core service offering, with annual projects increasing from 9 projects to 43 projects over the projection period. Revenue from this segment is expected to grow from approximately $135,000 in Year 1 to approximately $782,922 by Year 5 as businesses continue investing in customized software solutions and digital modernization initiatives.
- **Cloud Infrastructure Modernization and Deployment** is projected to expand from 6 projects in Year 1 to 29 projects in Year 5, with revenue increasing from approximately $72,000 to $417,558. Growth is expected to be supported by increasing cloud adoption, infrastructure

modernization projects, and the growing need for scalable and secure technology environments.

- **DevOps and Software Delivery Optimization** is forecast to grow from 8 projects to 37 projects during the five-year period. Revenue is projected to increase from approximately $120,000 in Year 1 to approximately $679,228 in Year 5 as organizations seek greater software delivery efficiency, infrastructure automation, and operational reliability.
- **Intelligent Data Platforms and AI Agent Development** is expected to increase from 5 projects in Year 1 to 23 projects in Year 5, generating revenue growth from approximately $110,000 to $622,626. Demand for this service is expected to be driven by organizations seeking intelligent data management, analytics capabilities, enterprise knowledge systems, and AI-powered decision-support solutions.

Direct Costs Forecast

Direct costs primarily consist of technical labor, cloud infrastructure consumption, software tools, development resources, and project-related implementation expenses. As project volume increases, direct costs are expected to rise proportionally to support expanded service delivery activities. Total direct costs are projected to increase from approximately **$50,960** in Year 1 to approximately **$292,978** in Year 5. Despite this increase, the company is expected to maintain strong gross margins due to the scalable nature of its technology services model.

Economic and Technological Impact

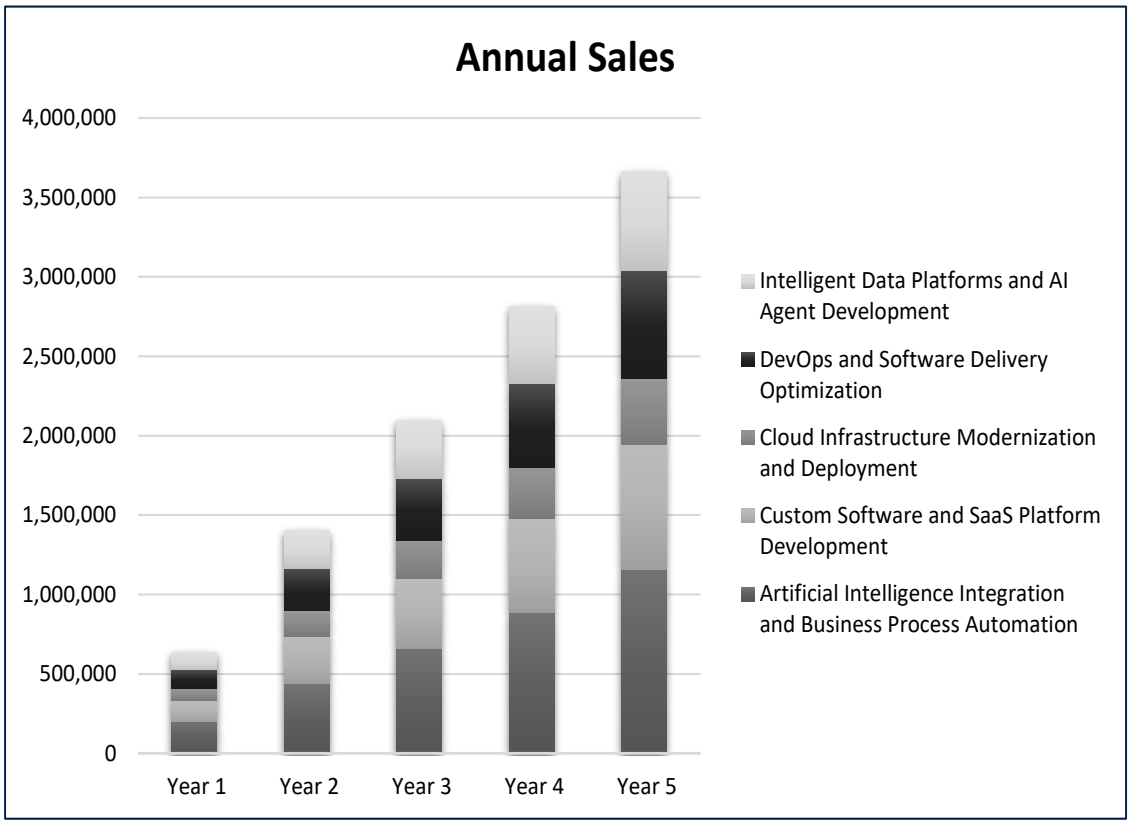
Beyond projected financial growth, Vertex Digital Systems LLC will contribute to strengthening the technological capabilities of U.S. businesses by supporting artificial intelligence adoption, cloud modernization, automation initiatives, software innovation, and intelligent data utilization. The company's services will help organizations improve operational efficiency, reduce manual processes, enhance decision-making capabilities, and strengthen digital competitiveness.

By delivering scalable technology solutions and supporting digital transformation initiatives, Vertex Digital Systems LLC will contribute to productivity growth, technological advancement, workforce modernization, and the continued expansion of the U.S. digital economy.

5.4.1 Annual Sales Forecast Table and Chart

Sales Forecast					
	Year 1	Year 2	Year 3	Year 4	Year 5
Unit Sales					
Artificial Intelligence Integration and Business Process Automation	10	21	30	38	48
Custom Software and SaaS Platform Development	9	19	27	34	43
Cloud Infrastructure Modernization and Deployment	6	13	18	23	29
DevOps and Software Delivery Optimization	8	17	24	31	37
Intelligent Data Platforms and AI Agent Development	5	11	15	19	23
Total Unit Sales	38	80	113	145	180
Unit Prices	Year 1	Year 2	Year 3	Year 4	Year 5
Artificial Intelligence Integration and Business Process Automation	$20,000.00	$21,000.00	$22,050.00	$23,152.50	$24,310.13
Custom Software and SaaS Platform Development	$15,000.00	$15,750.00	$16,537.50	$17,364.38	$18,232.59
Cloud Infrastructure Modernization and Deployment	$12,000.00	$12,600.00	$13,230.00	$13,891.50	$14,586.08
DevOps and Software Delivery Optimization	$15,000.00	$15,750.00	$16,537.50	$17,364.38	$18,232.59
Intelligent Data Platforms and AI Agent Development	$22,000.00	$23,100.00	$24,255.00	$25,467.75	$26,741.14
Sales					
Artificial Intelligence Integration and Business Process Automation	$200,000	$441,000	$657,531	$883,722	$1,159,885
Custom Software and SaaS Platform Development	$135,000	$297,675	$443,833	$596,512	$782,922
Cloud Infrastructure Modernization and Deployment	$72,000	$158,760	$236,711	$318,140	$417,558
DevOps and Software Delivery Optimization	$120,000	$264,600	$394,519	$530,233	$679,228
Intelligent Data Platforms and AI Agent Development	$110,000	$242,550	$361,642	$486,047	$622,626
Total Sales	$637,000	$1,404,585	$2,094,236	$2,814,653	$3,662,220
Direct Unit Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Artificial Intelligence Integration and Business Process Automation	$1,600.00	$1,680.00	$1,764.00	$1,852.20	$1,944.81
Custom Software and SaaS Platform Development	$1,200.00	$1,260.00	$1,323.00	$1,389.15	$1,458.61
Cloud Infrastructure Modernization and Deployment	$960.00	$1,008.00	$1,058.40	$1,111.32	$1,166.89
DevOps and Software Delivery Optimization	$1,200.00	$1,260.00	$1,323.00	$1,389.15	$1,458.61

Intelligent Data Platforms and AI Agent Development	$1,760.00	$1,848.00	$1,940.40	$2,037.42	$2,139.29
Direct Cost of Sales					
Artificial Intelligence Integration and Business Process Automation	$16,000	$35,280	$52,602	$70,698	$92,791
Custom Software and SaaS Platform Development	$10,800	$23,814	$35,507	$47,721	$62,634
Cloud Infrastructure Modernization and Deployment	$5,760	$12,701	$18,937	$25,451	$33,405
DevOps and Software Delivery Optimization	$9,600	$21,168	$31,561	$42,419	$54,338
Intelligent Data Platforms and AI Agent Development	$8,800	$19,404	$28,931	$38,884	$49,810
Subtotal Direct Cost of Sales	**$50,960**	**$112,367**	**$167,539**	**$225,172**	**$292,978**



6.0 Management Structure

As previously mentioned, Mr. Guilherme Pereira da Silva Alves will serve as the General Manager & AI Solutions Director of Vertex Digital Systems LLC. The company's management structure has been designed to support the gradual expansion of operations while maintaining the technical expertise necessary to deliver artificial intelligence solutions, software engineering services, cloud infrastructure projects, automation initiatives, and intelligent data platforms. The Personnel Plan reflects a phased hiring strategy aligned with projected revenue growth and increasing client demand. By Year 5, Vertex Digital Systems LLC is expected to employ 20

professionals, including Mr. Alves, creating a multidisciplinary team capable of supporting the company's long-term growth objectives.

6.1 Staffing Requirements

Vertex Digital Systems LLC has developed a structured personnel plan designed to support its operations and expansion within the artificial intelligence, software engineering, cloud computing, automation, and digital transformation sectors. The staffing strategy aligns with the company's projected growth and increasing demand for Artificial Intelligence Integration and Business Process Automation, Custom Software and SaaS Platform Development, Cloud Infrastructure Modernization and Deployment, DevOps and Software Delivery Optimization, and Intelligent Data Platforms and AI Agent Development services.

In Year 1, Vertex Digital Systems LLC will begin operations with an initial team of **five professionals**, including Mr. Guilherme Pereira da Silva Alves serving as General Manager & AI Solutions Director with a salary of **$100,000**. As founder and principal technical leader, Mr. Alves will oversee strategic planning, technology initiatives, service delivery, workforce development, and business expansion activities. Hiring during the first year will occur gradually as client demand and project volume increase.

Beginning in Year 2, the company will expand its workforce to support increasing project demand and a growing client base. By Year 5, Vertex Digital Systems LLC is projected to employ **20 professionals** across technical, operational, sales, and administrative functions.

General Manager & AI Solutions Director – Mr. Guilherme Pereira da Silva Alves

Mr. Alves will provide strategic and operational leadership throughout the five-year projection period. His responsibilities will include overseeing artificial intelligence initiatives, software architecture decisions, cloud infrastructure strategies, business development activities, workforce management, and overall company growth. His compensation is projected to increase from $100,000 in Year 1 to $209,881 in Year 5, reflecting the company's expansion and increasing managerial responsibilities.

Software Developers (Full-Stack Developers)

The company will initially employ one Software Developer in Year 1, expanding to two professionals by Year 3 and maintaining that level through Year 5. These professionals will develop custom software applications, SaaS platforms, enterprise systems, APIs, and integrated technology solutions that support client operations. Total compensation for this position is projected to increase from $100,200 in Year 1 to $243,101 in Year 5.

AI Solutions Engineers

Vertex Digital Systems LLC will employ one AI Solutions Engineer in Year 1, expanding to three professionals by Year 5. These specialists will design and implement artificial intelligence solutions, AI agents, intelligent automation systems, large language model integrations,

retrieval-augmented generation (RAG) environments, and AI-powered workflow solutions. Total compensation for this role is projected to increase from $64,050 in Year 1 to $401,117 in Year 5.

Cloud Infrastructure Engineers

Cloud Infrastructure Engineers will be introduced in Year 2, growing from one professional in Year 2 to three professionals by Year 5. These specialists will design, deploy, secure, and optimize cloud environments, manage cloud migration projects, implement Infrastructure-as-Code frameworks, support Kubernetes environments, and ensure infrastructure scalability and operational resilience. Total compensation is projected to increase from $84,000 in Year 2 to $291,722 in Year 5.

DevOps Engineers

The company will hire its first DevOps Engineer in Year 2, expanding to two professionals by Year 4 and maintaining that level through Year 5. These professionals will support deployment automation, CI/CD implementation, infrastructure orchestration, monitoring environments, software delivery optimization, and operational reliability initiatives. Total compensation for this position is projected to increase from $94,500 in Year 2 to $218,791 in Year 5.

Project Coordinators

Vertex Digital Systems LLC will employ one Project Coordinator in Year 1, increasing to two professionals by Year 4. These individuals will coordinate project schedules, facilitate communication between technical teams and clients, manage project documentation, monitor deliverables, and support successful implementation of technology solutions. Total compensation is projected to increase from $20,000 in Year 1 to $145,861 in Year 5.

Data & Automation Engineers

The company will introduce one Data & Automation Engineer in Year 2, expanding to two professionals by Year 4 and Year 5. These specialists will develop intelligent data platforms, analytics environments, automated workflows, enterprise integrations, business intelligence solutions, and data processing systems that support operational visibility and decision-making. Total compensation for this role is projected to increase from $88,200 in Year 2 to $204,205 in Year 5.

Sales Representatives

A Sales Representative will be hired in Year 1 to support client acquisition, business development, and market expansion efforts. The sales team will increase to two professionals by Year 4 as the company expands its service offerings and geographic reach. Total compensation is projected to increase from $72,000 in Year 1 to $175,033 in Year 5.

Administrative Manager

An Administrative Manager will be introduced in Year 2 to oversee administrative operations, financial coordination, internal procedures, vendor relationships, and organizational support activities. Compensation is projected to increase from $63,000 in Year 2 to $72,930 in Year 5.

Customer Service Representatives

Customer Service Representatives will be introduced in Year 3, beginning with one professional and expanding to two professionals by Year 5. These employees will support client communication, coordinate service requests, facilitate issue resolution, and contribute to client satisfaction and retention initiatives. Total compensation is projected to increase from $46,305 in Year 3 to $102,103 in Year 5.

Overall, Vertex Digital Systems LLC's workforce is projected to expand from **5 employees in Year 1** to **20 employees by Year 5**, reflecting the company's planned operational growth and increasing demand for artificial intelligence, cloud infrastructure, software engineering, automation, and intelligent data solutions. Total payroll is projected to increase from **$356,250 in Year 1** to approximately **$2,064,743 in Year 5**, consistent with the company's phased hiring strategy and expanding service delivery capacity.

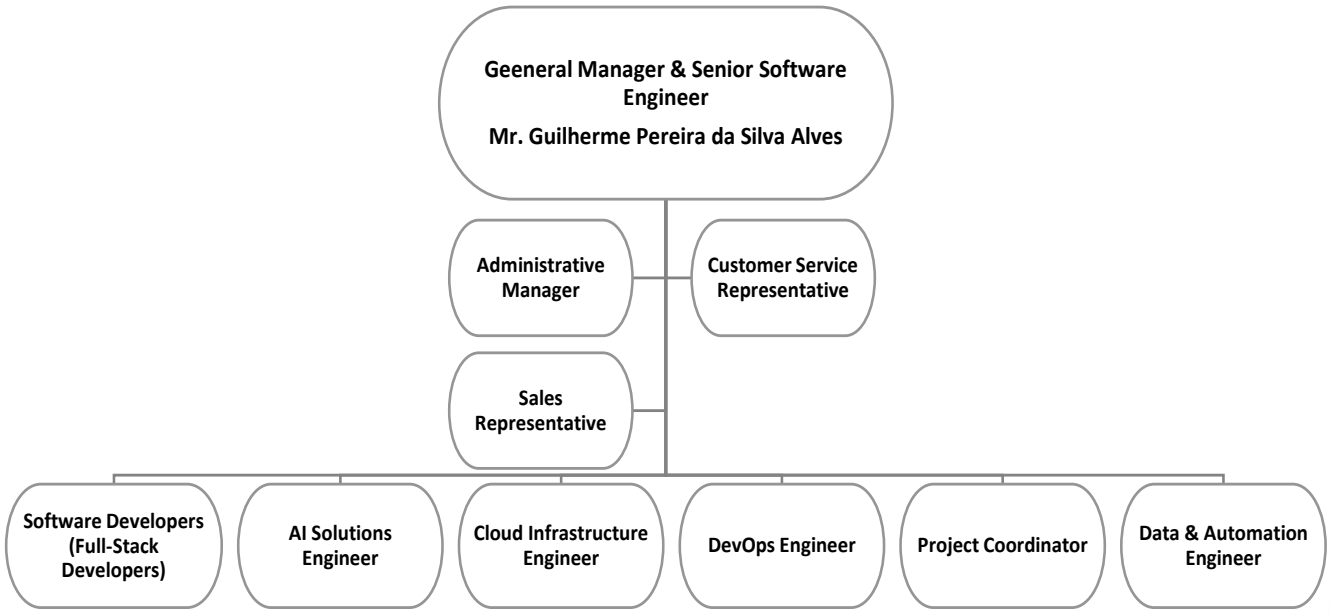
6.2 Annual Personnel Plan Table

Personnel Plan					
	Year 1	Year 2	Year 3	Year 4	Year 5
General Manager & AI Solutions Director - Mr. Guilherme Pereira da Silva Alves	$100,000	$138,000	$158,700	$182,505	$209,881
Software Developers (Full-Stack Developers)	$100,200	$105,000	$220,500	$231,525	$243,101
AI Solutions Engineer	$64,050	$115,500	$242,550	$254,678	$401,117
Cloud Infrastructure Engineer	$0	$84,000	$176,400	$185,220	$291,722
DevOps Engineer	$0	$94,500	$99,225	$208,373	$218,791
Project Coordinator	$20,000	$63,000	$66,150	$138,915	$145,861
Data & Automation Engineer	$0	$88,200	$92,610	$194,481	$204,205
Sales Representative	$72,000	$75,600	$79,380	$166,698	$175,033
Administrative Manager	$0	$63,000	$66,150	$69,458	$72,930
Customer Service Representative	$0	$0	$46,305	$48,620	$102,103
Total People	5	9	13	17	20
Total Payroll	**$356,250**	**$826,800**	**$1,247,970**	**$1,680,472**	**$2,064,743**

6.3 Five-Year Personnel Plan Table

Personnel Plan					
	Year 1	Year 2	Year 3	Year 4	Year 5
General Manager & AI Solutions Director - Mr. Guilherme Pereira da Silva Alves	1	1	1	1	1
Software Developers (Full-Stack Developers)	1	1	2	2	2
AI Solutions Engineer	1	1	2	2	3
Cloud Infrastructure Engineer	0	1	2	2	3
DevOps Engineer	0	1	1	2	2
Project Coordinator	1	1	1	2	2
Data & Automation Engineer	0	1	1	2	2
Sales Representative	1	1	1	2	2
Administrative Manager	0	1	1	1	1
Customer Service Representative	0	0	1	1	2
Total People	**5**	**9**	**13**	**17**	**20**

6.4 Organizational Chart – Year 5



6.5 Duties and Responsibilities

General Manager & AI Solutions Director – Mr. Guilherme Pereira da Silva Alves

- Establish the company's strategic direction, operational objectives, and long-term growth initiatives.
- Oversee the design and implementation of artificial intelligence, automation, software development, and cloud infrastructure projects.
- Direct technical teams to ensure the successful delivery of client projects within scope, budget, and timeline requirements.
- Identify business development opportunities and cultivate relationships with clients, strategic partners, and industry stakeholders.
- Evaluate emerging technologies and integrate innovative solutions into the company's service portfolio.
- Manage financial planning, resource allocation, budgeting, and organizational performance.
- Supervise workforce development, recruitment activities, and employee training initiatives.
- Ensure compliance with operational policies, quality standards, cybersecurity best practices, and industry regulations.

Software Developers (Full-Stack Developers)

- Develop and maintain custom software applications, SaaS platforms, and enterprise systems.
- Design and implement front-end and back-end functionality using modern development frameworks.
- Integrate databases, APIs, and third-party services into software environments.
- Perform testing, debugging, and performance optimization to ensure reliable application operation.

AI Solutions Engineer

- Design and implement artificial intelligence solutions that support business automation and operational efficiency.
- Develop AI-powered assistants, AI agents, and large language model (LLM) integrations.
- Build retrieval-augmented generation (RAG) systems and intelligent information-processing solutions.
- Optimize AI models and automation workflows to improve performance and business outcomes.

Cloud Infrastructure Engineer

- Design, deploy, and manage cloud and hybrid infrastructure environments.
- Implement Infrastructure-as-Code (IaC) frameworks and cloud automation solutions.
- Configure cloud security controls, access management policies, and disaster recovery environments.
- Monitor infrastructure performance, scalability, and system availability.

DevOps Engineer

- Develop and maintain CI/CD pipelines to automate software deployment processes.
- Implement infrastructure orchestration, configuration management, and deployment automation solutions.
- Monitor application performance and maintain observability environments.
- Collaborate with development teams to improve software delivery efficiency and operational reliability.

Project Coordinator

- Coordinate project schedules, milestones, and resource allocation activities.
- Facilitate communication between clients, technical teams, and company management.
- Maintain project documentation, status reports, and implementation records.
- Monitor project progress to ensure timely delivery of client solutions.

Data & Automation Engineer

- Develop intelligent data processing systems and automated workflow solutions.
- Design and maintain data integration pipelines and analytics environments.
- Implement business intelligence and reporting solutions that support decision-making.
- Optimize data quality, accessibility, and operational visibility across technology platforms.

Sales Representative

- Identify prospective clients and generate new business opportunities.
- Present company services and technology solutions to potential customers.
- Develop and maintain relationships with clients and strategic business contacts.
- Support proposal preparation, contract discussions, and sales follow-up activities.

Administrative Manager

- Oversee daily administrative operations and internal business processes.
- Manage financial records, vendor coordination, and operational documentation.
- Support human resources administration, employee onboarding, and personnel records
- management.
- Ensure compliance with company policies, reporting requirements, and administrative procedures.

Customer Service Representative

- Respond to client inquiries and coordinate service-related requests.
- Assist customers with issue resolution and support communication activities.
- Maintain records of customer interactions and service requests.
- Monitor customer satisfaction and escalate operational concerns when necessary.

7.0 Financial Summary

The financial plan for Vertex Digital Systems LLC is a critical analysis of the company's financial projections, including revenue, expenses, and overall financial performance. It offers a comprehensive overview of the expected financial trajectory over a specific period of time and determines the company's financial feasibility. The plan encompasses essential aspects such as startup funding, profit and loss, cash flow, and balance sheet. The financial plan plays a crucial role in determining the company's success and helps in making informed decisions to ensure that the company achieves its financial objectives.

7.1 Break-even Analysis

The Break-even Analysis is an indispensable financial metric for Vertex Digital Systems LLC, offering crucial insights into when the company's total revenues will match its total costs. For Vertex Digital Systems LLC, this pivotal financial equilibrium is attained when monthly sales hit 3 units, leading to a break-even revenue of $38,973. This calculation rests on a set of fundamental assumptions:

1. **Average Revenue Per Unit**: The revenue expected from each unit sold is projected to average $16,763.16.
2. **Average Variable Cost Per Unit**: The average variable cost associated with each unit is estimated to be $1,341.05.
3. **Monthly Fixed Costs**: The company anticipates incurring consistent monthly fixed costs amounting to $38,973, which remain constant regardless of the number of units sold.

Grasping the break-even point is critical for guiding the strategic direction of Vertex Digital Systems LLC. It acts as a crucial benchmark for establishing attainable sales goals, judiciously managing expenditures, and steering the company toward financial health and profitability. Reaching this break-even point signifies a noteworthy achievement for the company, marking the transition from experiencing losses to starting to generate profits.

7.1.1 Break-even Analysis Table

Break-even Analysis	
Monthly Units Break-even	3
Monthly Revenue Break-even	$42,362
Assumptions:	
Average Per-Unit Revenue	$16,763.16
Average Per-Unit Variable Cost	$1,341.05
Estimated Monthly Fixed Cost	**$38,973**

7.2 Profit and Loss Assumptions

Vertex Digital Systems LLC has developed a financial structure designed to support the growth of a technology company specializing in artificial intelligence implementation, software engineering, cloud infrastructure modernization, automation solutions, and intelligent data platforms. The company's financial strategy prioritizes investment in highly skilled technical professionals, technology infrastructure, business development initiatives, and operational resources necessary to deliver advanced technology solutions to organizations throughout the United States.

As the company expands its client base and project portfolio, direct costs are expected to increase gradually in line with service delivery activities. These costs primarily consist of technical labor, cloud infrastructure consumption, software licenses, development tools, data processing resources, and project-related implementation expenses required to support artificial intelligence deployments, software development projects, cloud modernization initiatives, and automation solutions.

To support long-term growth, Vertex Digital Systems LLC will implement a targeted marketing and business development strategy focused on increasing brand visibility, expanding professional relationships, and reaching organizations pursuing artificial intelligence adoption, cloud transformation, operational automation, and digital modernization initiatives. These efforts are expected to strengthen market penetration and support continued client acquisition

Based on the projected sales model, company revenue is expected to grow steadily from $637,000 in Year 1 to $3,662,220 by Year 5 as the company expands its project capacity and client portfolio. Direct costs of sales are projected to increase from $50,960 in Year 1 to $292,978 in Year 5, reflecting the scaling of service delivery activities.

The company's gross margin is projected to remain stable at approximately 92%, increasing from $586,040 in Year 1 to $3,369,242 by Year 5. This margin reflects the nature of software development services, where value creation is primarily driven by specialized technical expertise rather than physical production costs.

Operating expenses will grow gradually as the company expands its workforce and operational infrastructure. Total operating expenses are projected to increase from $467,675 in Year 1 to $2,441,096 by Year 5, primarily driven by payroll expansion and operational scaling.

Profitability is expected to improve steadily as revenue increases. EBITDA is projected to rise from $118,365 in Year 1 to $935,646 in Year 5, demonstrating the company's ability to scale its operations efficiently.

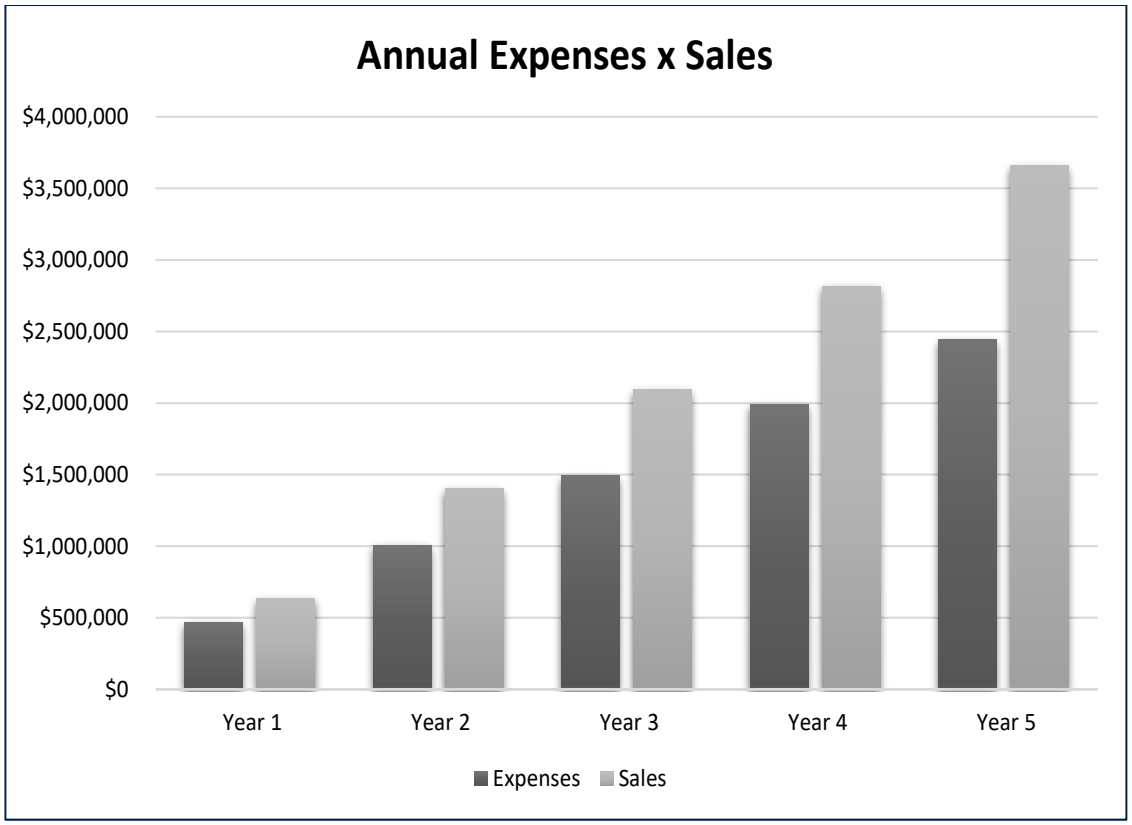
Net profit is projected to grow from $86,406 in Year 1 to $677,547 by Year 5, resulting in an improvement in net profit margins from 13.56% to approximately 18.50% over the projection period. These results reflect the company's ability to expand its services while maintaining operational efficiency and strong financial discipline.

A detailed breakdown of revenue, operating costs, and payroll projections is presented in the financial tables included in the appendix, providing a comprehensive overview of the company's financial outlook during its first five years of operation.

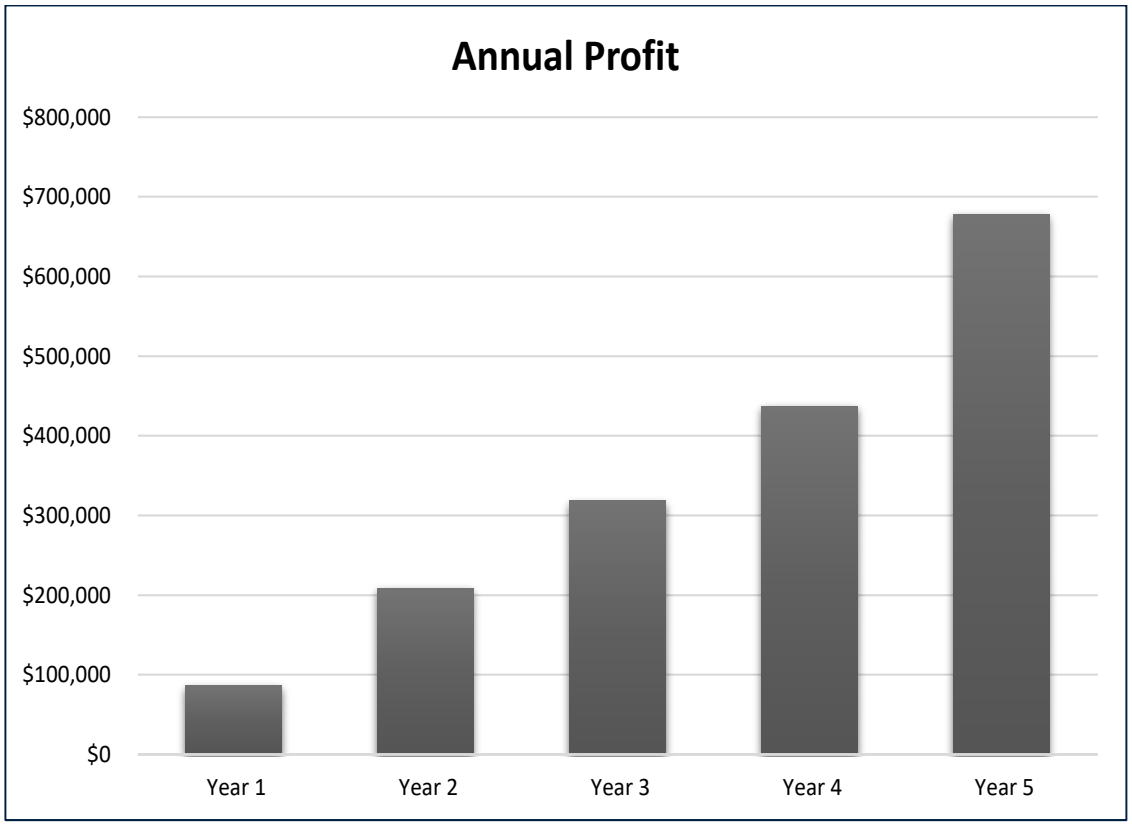
7.2.1 Annual Profit and Loss Table and Charts

Pro Forma Profit and Loss					
	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	$637,000	$1,404,585	$2,094,236	$2,814,653	$3,662,220
Direct Cost of Sales	$50,960	$112,367	$167,539	$225,172	$292,978
Total Cost of Sales	$50,960	$112,367	$167,539	$225,172	$292,978
Gross Margin	$586,040	$1,292,218	$1,926,697	$2,589,481	$3,369,242
Gross Margin %	92.00%	92.00%	92.00%	92.00%	92.00%
Expenses					
Payroll	$356,250	$826,800	$1,247,970	$1,680,472	$2,064,743
Payroll Taxes	$35,625	$82,680	$124,797	$168,047	$206,474
Depreciation	$0	$3,000	$4,500	$6,000	$7,500
Rent	$24,000	$28,800	$34,560	$41,472	$49,766
Insurance	$3,000	$3,600	$4,320	$5,184	$6,221
Marketing/Promotion	$12,000	$14,400	$17,280	$20,736	$24,883
Utilities/Internet/Phone	$2,400	$2,880	$3,456	$4,147	$4,977
Employees Education	$0	$8,000	$9,600	$11,520	$13,824
Software & Licenses	$18,000	$18,900	$22,680	$27,216	$32,659
Equipment	$14,000	$16,000	$19,200	$23,040	$27,648
Accountant	$2,400	$2,400	$2,400	$2,400	$2,400
Total Operating Expenses	$467,675	$1,007,460	$1,490,763	$1,990,234	$2,441,096
Profit Before Interest and Taxes	$118,365	$284,758	$435,934	$599,247	$928,146
EBITDA	$118,365	$287,758	$440,434	$605,247	$935,646
Taxes Incurred	$31,959	$76,885	$117,702	$161,797	$250,600
Net Profit	$86,406	$207,873	$318,232	$437,450	$677,547
Net Profit/Sales	**13.56%**	**14.80%**	**15.20%**	**15.54%**	**18.50%**

7.2.2 Annual Expenses x Sales Chart



7.2.3 Annual Profit Chart



7.3 Cash Flow Assumptions

Vertex Digital Systems LLC's Pro Forma Cash Flow statement for the five-year projection period demonstrates a positive and steadily improving cash position as the company expands its operations and increases service delivery capacity.

In Year 1, total cash inflows from operations are projected to reach $637,000, generated through project-based software development services. These inflows are divided equally between cash sales and receivable collections, reflecting a balanced payment structure for client contracts.

As the company grows and secures additional development projects, operational cash inflows are projected to increase to $3,662,220 by Year 5, following the growth in service demand and project volume.

Operational expenditures consist primarily of payroll expenses and payments related to business operations such as rent, marketing, software tools, and other administrative costs. Cash spending related to payroll is projected to increase from $356,250 in Year 1 to $2,064,743 by Year 5, reflecting the company's expanding workforce.

Bill payments associated with operational costs are projected to grow from $174,154 in Year 1 to $894,208 by Year 5, supporting the company's operational infrastructure and continued service expansion.

Overall operational expenditures are projected to increase from $530,404 in Year 1 to $2,958,951 by Year 5 as the company scales its activities.

Additional cash expenditures include dividend payments beginning in Year 2, increasing gradually from $20,000 in Year 2 to $75,000 by Year 5.

Despite these growing expenditures, Vertex Digital Systems LLC is expected to maintain a positive cash flow throughout the projection period. Net cash flow is projected to increase from $106,596 in Year 1 to $628,269 in Year 5, demonstrating strong operational sustainability.

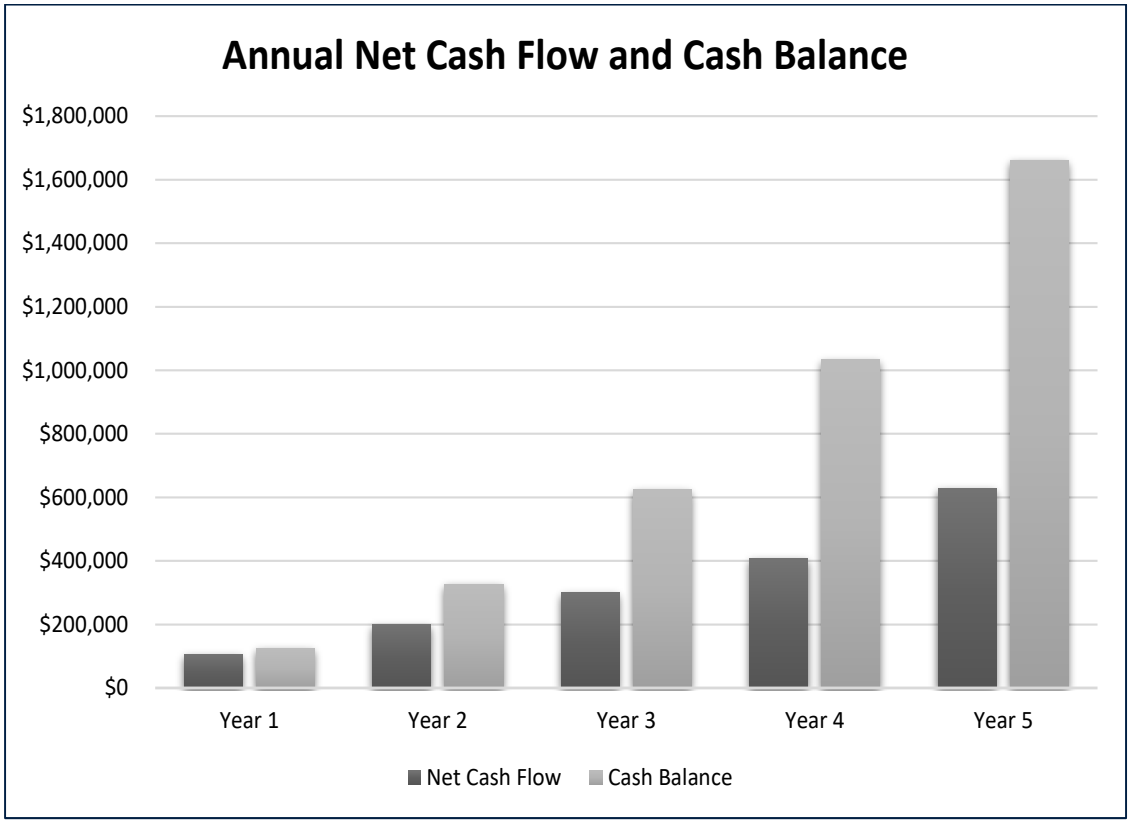
As a result of these positive cash flows, the company's cash balance is projected to grow significantly from $124,596 in Year 1 to $1,661,504 by Year 5, providing a strong liquidity position to support continued operational growth.

Additional details regarding cash inflows, operational expenditures, and financial projections are provided in the financial tables included in the appendix.

7.3.1 Annual Cash Flow Table and Chart

Pro Forma Cash Flow					
	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Received					
Cash from Operations					
Cash Sales	$318,500	$702,293	$1,047,118	$1,407,327	$1,831,110
Cash from Receivables	$318,500	$702,293	$1,047,118	$1,407,327	$1,831,110
Subtotal Cash from Operations	$637,000	$1,404,585	$2,094,236	$2,814,653	$3,662,220
Additional Cash Received					
Non-Operating (Other) Income	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Received	$0	$0	$0	$0	$0
New Current Borrowing	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)	$0	$0	$0	$0	$0
New Long-term Liabilities	$0	$0	$0	$0	$0
Sales of Other Current Assets	$0	$0	$0	$0	$0
Sales of Long-term Assets	$0	$0	$0	$0	$0
New Investment Received	$0	$0	$0	$0	$0
Subtotal Cash Received	$637,000	$1,404,585	$2,094,236	$2,814,653	$3,662,220
Expenditures	Year 1	Year 2	Year 3	Year 4	Year 5
Expenditures from Operations					
Cash Spending	$356,250	$826,800	$1,247,970	$1,680,472	$2,064,743
Bill Payments	$174,154	$356,944	$510,661	$676,989	$894,208
Subtotal Spent on Operations	$530,404	$1,183,744	$1,758,631	$2,357,461	$2,958,951
Additional Cash Spent					
Non-Operating (Other) Expense	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Paid Out	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment	$0	$0	$0	$0	$0
Purchase Other Current Assets	$0	$0	$0	$0	$0
Purchase Long-term Assets	$0	$0	$0	$0	$0
Dividends	$0	$20,000	$35,000	$50,000	$75,000
Subtotal Cash Spent	$530,404	$1,203,744	$1,793,631	$2,407,461	$3,033,951
Net Cash Flow	$106,596	$200,841	$300,605	$407,193	$628,269
Cash Balance	**$124,596**	**$325,437**	**$626,042**	**$1,033,235**	**$1,661,504**

7.3.2 Annual Net Cash Flow and Cash Balance Chart



7.4 Balance Sheet Assumptions

Vertex Digital Systems LLC's Pro Forma Balance Sheet reflects a strong financial structure characterized by consistent asset growth, controlled liabilities, and increasing equity over the five-year projection period.

In Year 1, the company's total current assets are projected at $124,596, consisting primarily of cash generated from operations. As the company's profitability increases and positive cash flow accumulates, total current assets are expected to grow steadily, reaching $1,661,504 by Year 5.

Long-term assets are minimal during the projection period, as the company's primary investments relate to human capital and software development resources rather than large physical infrastructure. Accumulated depreciation is projected to increase gradually from $0 in Year 1 to $21,000 by Year 5, reflecting the depreciation of equipment and operational assets.

Overall, total company assets are projected to grow from $124,596 in Year 1 to $1,640,504 by Year 5, reflecting the company's financial expansion and accumulation of operational cash reserves.

On the liabilities side, the company maintains a conservative financial structure with limited debt exposure. Current liabilities consist primarily of accounts payable related to operational expenses, increasing gradually from $20,190 in Year 1 to $74,994 by Year 5.

Vertex Digital Systems LLC does not anticipate relying on external borrowing or long-term liabilities during the projection period, maintaining financial independence and operational flexibility.

Paid-in capital will remain stable at $70,000, representing the founder's initial investment in the company. Retained earnings are projected to grow significantly as profits accumulate over time, increasing from an initial negative balance of ($52,000) to $817,962 by Year 5.

Annual earnings are projected to increase from $86,406 in Year 1 to $677,547 by Year 5, reflecting the company's steady revenue growth and improving operational efficiency.

As a result, total company equity and net worth are projected to grow from $104,406 in Year 1 to $1,565,509 by Year 5.

7.4.1 Annual Balance Sheet Table

Pro Forma Balance Sheet					
	Year 1	Year 2	Year 3	Year 4	Year 5
Assets					
Current Assets					
Cash	$124,596	$325,437	$626,042	$1,033,235	$1,661,504
Accounts Receivable	$0	$0	$0	$0	$0
Inventory	$0	$0	$0	$0	$0
Other Current Assets	$0	$0	$0	$0	$0
Total Current Assets	$124,596	$325,437	$626,042	$1,033,235	$1,661,504
Long-term Assets					
Long-term Assets	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$3,000	$7,500	$13,500	$21,000
Total Long-term Assets	$0	($3,000)	($7,500)	($13,500)	($21,000)
Total Assets	$124,596	$322,437	$618,542	$1,019,735	$1,640,504
Liabilities and Capital	Year 1	Year 2	Year 3	Year 4	Year 5
Current Liabilities					
Accounts Payable	$20,190	$30,157	$43,030	$56,772	$74,994
Current Borrowing	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$20,190	$30,157	$43,030	$56,772	$74,994
Long-term Liabilities	$0	$0	$0	$0	$0
Total Liabilities	$20,190	$30,157	$43,030	$56,772	$74,994
Paid-in Capital	$70,000	$70,000	$70,000	$70,000	$70,000
Retained Earnings	($52,000)	$14,406	$187,280	$455,512	$817,962
Earnings	$86,406	$207,873	$318,232	$437,450	$677,547
Total Capital	$104,406	$292,280	$575,512	$962,962	$1,565,509
Total Liabilities and Capital	$124,596	$322,437	$618,542	$1,019,735	$1,640,504
Net Worth	**$104,406**	**$292,280**	**$575,512**	**$962,962**	**$1,565,509**

8.0 Mr. Guilherme Pereira da Silva Alves' National-level Impact

Advancing Artificial Intelligence Adoption Across U.S. Businesses

Artificial intelligence has become one of the most transformative technologies influencing productivity, competitiveness, and innovation throughout the United States economy.[22] Organizations across industries are increasingly seeking practical ways to integrate AI into their operations to improve efficiency, automate repetitive tasks, enhance decision-making, and optimize resource utilization. However, many businesses, particularly small and medium-sized enterprises, lack the specialized expertise required to successfully implement and manage AI-driven solutions.

Through Vertex Digital Systems LLC, Mr. Guilherme Pereira da Silva Alves will help organizations adopt artificial intelligence technologies by developing AI-powered automation systems, intelligent assistants, AI agents, retrieval-augmented generation (RAG) platforms, and operational support solutions tailored to business needs. These technologies will enable organizations to reduce manual workloads, improve access to information, increase workforce productivity, and accelerate digital transformation efforts. By facilitating the practical implementation of artificial intelligence across multiple sectors, Mr. Alves' work will contribute to broader national efforts to strengthen U.S. technological leadership and innovation capacity.

Supporting Digital Transformation for Small and Medium-Sized Businesses

Small and medium-sized businesses are a critical component of the U.S. economy, yet many continue to face challenges related to technology adoption, operational modernization, and access to advanced digital solutions.[23] Limited internal technical resources often prevent these organizations from implementing the systems necessary to remain competitive in increasingly digital markets.

Vertex Digital Systems LLC will support these businesses through the development of custom software applications, SaaS platforms, automation systems, cloud-based solutions, and intelligent data environments that improve operational efficiency and scalability. By providing access to advanced technologies that might otherwise remain inaccessible to smaller organizations, the company will help businesses modernize operations, improve productivity, and strengthen their long-term competitiveness.

These improvements support economic growth by enabling organizations to operate more efficiently, expand service capabilities, and respond more effectively to changing market conditions.

[22] https://www.sciencedirect.com/science/article/pii/S2773207X24001386
[23] https://www.mckinsey.com/mgi/our-research/americas-small-businesses-time-to-think-big

Strengthening Cloud Infrastructure and Operational Resilience

Modern organizations increasingly rely on cloud infrastructure to support business continuity, operational flexibility, cybersecurity, and digital service delivery.[24] As cloud adoption continues to accelerate, businesses require specialized expertise to migrate systems, optimize infrastructure, secure digital assets, and maintain reliable operational environments.

Mr. Alves' expertise in cloud architecture, infrastructure automation, containerization technologies, and cloud-native environments positions Vertex Digital Systems LLC to assist organizations in modernizing technology infrastructures and improving operational resilience. Through cloud modernization initiatives, Infrastructure-as-Code implementations, Kubernetes deployments, and cloud optimization projects, the company will help businesses improve scalability, system reliability, and cybersecurity readiness.

These improvements contribute to stronger digital infrastructure across the United States while supporting organizations that increasingly depend on cloud-based operations and services.

Improving Data Utilization and Intelligent Decision-Making

Data has become one of the most valuable resources within modern organizations. Businesses generate large volumes of operational, financial, customer, and performance-related information, yet many struggle to effectively transform this information into actionable insights.[25] Fragmented systems and inefficient information management often limit the value organizations can derive from their data assets.

Vertex Digital Systems LLC will develop intelligent data platforms, analytics environments, enterprise integration systems, and AI-driven information management solutions that improve how organizations collect, process, analyze, and utilize information. These solutions will support faster decision-making, greater operational visibility, and improved organizational planning.

By helping businesses utilize data more effectively, the company will contribute to increased productivity, stronger operational performance, and more informed business decision-making across multiple sectors of the U.S. economy.

Accelerating Software Modernization and Intelligent Automation

Many organizations continue to rely on legacy software systems that limit operational efficiency, increase maintenance costs, and restrict the adoption of modern technologies. Outdated systems often create barriers to innovation and prevent organizations from achieving the full benefits of digital transformation initiatives.[26]

[24] https://www.deloitte.com/us/en/insights/topics/digital-transformation/cloud-infrastructure-strategy.html
[25] https://www.linkedin.com/pulse/importance-data-modern-organizations-comprehensive-overview-tekvaly-nrgdf
[26] https://www.mindinventory.com/blog/how-legacy-systems-slow-down-business-operations

Through Vertex Digital Systems LLC, Mr. Alves will support software modernization efforts by redesigning legacy applications, implementing modern software architectures, optimizing software delivery processes, and integrating automation technologies into existing business environments. The company will also deploy DevOps practices, deployment automation frameworks, and operational monitoring systems that improve software reliability and accelerate technology deployment cycles.

These modernization initiatives will help organizations improve operational agility, reduce technology-related inefficiencies, and maintain compatibility with evolving digital technologies.

Economic Impact and High-Skilled Workforce Development

In addition to supporting technological advancement, Vertex Digital Systems LLC will generate measurable economic benefits through job creation, workforce development, and increased business productivity. Over its first five years of operation, the company plans to create high-skilled positions including Software Developers, AI Solutions Engineers, Cloud Infrastructure Engineers, DevOps Engineers, Data & Automation Engineers, Project Coordinators, Sales Representatives, Customer Service Representatives, and administrative personnel.

These positions will contribute to the continued development of the U.S. technology workforce while creating opportunities for professionals working in fields that are critical to the nation's future economic competitiveness. The company's workforce expansion will also support knowledge transfer, technical skill development, and the broader adoption of advanced technologies within the American business community.

Beyond direct employment, the company's services will help client organizations improve operational efficiency, increase productivity, reduce technology-related costs, and strengthen competitiveness, generating indirect economic benefits throughout multiple sectors of the U.S. economy.

Alignment with U.S. Technology and Innovation Priorities

Mr. Alves' proposed endeavor aligns closely with national priorities focused on technological innovation, artificial intelligence adoption, digital modernization, workforce productivity, and economic competitiveness. Federal and private-sector initiatives increasingly emphasize the importance of artificial intelligence, cloud computing, automation technologies, cybersecurity, and advanced digital infrastructure as essential drivers of future economic growth.

Through Vertex Digital Systems LLC, Mr. Alves will apply his expertise in artificial intelligence, software engineering, cloud infrastructure, automation technologies, and intelligent data systems to help organizations modernize operations and adopt advanced technologies. These efforts directly support broader national objectives aimed at strengthening innovation capacity, improving business productivity, enhancing digital resilience, and maintaining the United States' position as a global leader in technology development and adoption.

By expanding access to advanced technology solutions and helping organizations leverage artificial intelligence, cloud infrastructure, automation, and data-driven systems more effectively, Mr. Alves' work will contribute to long-term economic growth, technological advancement, and increased competitiveness across the United States.

9.0 Indirect jobs creation - Economic Policy Institute

Each industry has backward linkages to economic sectors that provide the materials needed for the industry's output, just as each industry has forward linkages to the economic sectors where the industry's workers spend their income. Therefore, in addition to the jobs directly supported by an industry, a large number of indirect jobs may also be supported by that industry. The subtraction or addition of jobs and output in industries with strong backward and forward linkages to other economic sectors can cause large ripple effects.

According to the national job multipliers published by the Economy Policy Institute (EPI),[27] 100 direct jobs in the Computer systems design and related services industry generate a total of 283.4 total indirect jobs, as demonstrated in the following table:

Employment multipliers per 100 direct jobs, all private-sector industries

	Industry	Direct jobs	Supplier jobs*	Induced jobs**	Total indirect jobs
129	Computer systems design and related services	100.0	134.1	149.3	283.4
130	Management, scientific, and technical consulting services	100.0	91.1	116.5	207.6
131	Scientific research and development services	100.0	519.3	323.7	842.9
132	Advertising, public relations, and related services	100.0	460.9	270.7	731.6
133	Other professional, scientific, and technical services	100.0	70.8	83.6	154.3

Since Mr. Alves will create 20 direct jobs by the end of Year 5, the total number of indirect jobs to be generated in the same period will reach 56 according to the multipliers provided by the EPI. In addition to its in-house team, Vertex Digital Systems LLC will hire a number of independent contractors on a project basis, including legal professionals and technicians.

[27] https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/

Additionally, the company will mediate in the hiring of professionals that will perform services that are deemed to be required. Therefore, the company will stimulate the employment of a number of workers of different profiles. Furthermore, the company will hire an outsourced marketing company to develop its website and work with marketing campaigns.

The direct and indirect job creation by Vertex Digital Systems LLC, as well as the utilization of independent contractors and outsourced services, will have a significant positive impact on the local and national economy, fostering job growth, generating income, and contributing to overall economic prosperity.

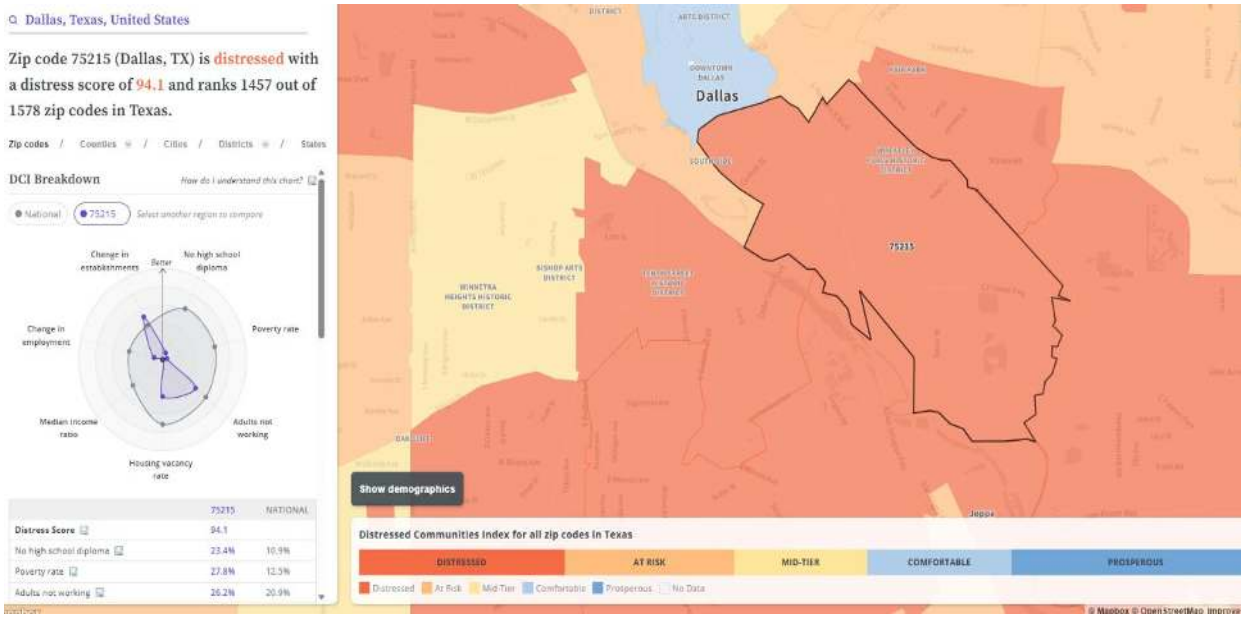
Vertex Digital Systems LLC' expansion plans, under the leadership of Mr. Guilherme Pereira da Silva Alves, encompass the creation of direct and indirect employment opportunities, the payment of substantial taxes, and the utilization of local resources and services. By contributing to job creation, tax revenue, and economic growth, Vertex Digital Systems LLC aims to make a lasting and positive impact on both the local community and the broader U.S. economy.

9.1 Distressed Communities

This section explores the complex dynamics of economically distressed communities, focusing on a specific region in Dallas, Texas. Areas classified as distressed communities typically face significant socioeconomic challenges that affect employment opportunities, income levels, educational attainment, and overall economic mobility. Understanding these dynamics is essential for businesses and policymakers seeking to promote economic development, create employment opportunities, and improve local living conditions.

Dallas, TX is classified as a distressed community according to the Distressed Communities Index (DCI), with a distress score of 94.1, ranking 1457 out of 1578 zip codes in Texas. This classification indicates that the region faces considerable economic challenges when compared to other areas within the state and the nation.[28]

[28] https://eig.org/distressed-communities/?regions%5B0%5D=75215&geo=zctas&lat=32.76&lon=-96.78&z=12.36



For businesses seeking to establish operations in areas with economic challenges, understanding the demographic composition and socioeconomic conditions of the community provides important insights into workforce availability, community needs, and opportunities for economic engagement. This analysis examines the demographic and socioeconomic profile of Dallas and highlights potential opportunities for businesses to contribute to economic revitalization and community development.

Demographic and Socioeconomic Profile

• **Economic Distress:** The region has a very high distress score of 94.1, placing it among the most economically challenged areas in Texas. Several economic indicators contribute to this classification, including high poverty levels, lower median income relative to national averages, and limited employment growth in recent years.

• **Demographics:** The community is predominantly Black or African-American (63.3%), followed by Hispanic or Latino residents (22.7%), and Non-Hispanic White residents (11.4%), with smaller percentages representing other racial and ethnic groups. This diverse demographic composition highlights the importance of culturally aware business practices and community engagement initiatives.

• **Education Levels:** Educational attainment within the area reflects ongoing socioeconomic challenges. Approximately 23.4% of residents lack a high school diploma, which is significantly higher than the national average of 10.9%. While 33.8% of residents have a high school diploma, and 25.7% have some college education, only 17.2% hold a bachelor's degree or higher, which is below the national average of 34.3%. These figures indicate opportunities for businesses to provide workforce development and technical training programs that improve employment readiness.

• **Occupation and Employment:** Approximately 26.2% of adults in the community are not currently working, which is higher than the national average of 20.9%. This suggests the presence of an available labor force that could benefit from employment opportunities and skills development initiatives offered by local businesses.

• **Income and Poverty Rates:** The poverty rate in the area is approximately 27.8%, more than double the national average of 12.5%. Additionally, the median income ratio is only 47.3% of the national median, reflecting limited economic mobility and lower household income levels within the community.

Business Implications

• **Market Potential:** The economic conditions of the area highlight the importance of services that support economic development, job creation, and technological advancement. Businesses that introduce high-skilled employment opportunities and contribute to local economic growth can have a meaningful impact in communities facing economic challenges.

• **Workforce Opportunities:** The available labor force presents opportunities for businesses to hire locally and provide technical training programs. Companies operating in technology and telecommunications sectors may contribute to workforce development by offering specialized training and career pathways.

• **Community Engagement:** Businesses that invest in community engagement initiatives such as workforce development programs, educational outreach, and local hiring practices can play an important role in supporting economic revitalization. These efforts can also strengthen relationships with local stakeholders and contribute to long-term community development.

• **Economic Incentives:** Operating in distressed communities may qualify businesses for economic development incentives, including tax credits, grants, workforce training programs, and federal or state investment initiatives. These incentives are often designed to encourage business development and job creation in economically challenged regions.

• **Cultural Sensitivity:** Given the diverse demographic composition of the region, businesses operating in this community should adopt inclusive and culturally aware practices to ensure effective engagement with local residents and stakeholders.

Establishing operations in a distressed community in Dallas, Texas, presents both challenges and opportunities. By creating skilled employment opportunities, supporting workforce development, and contributing to economic activity within the region, businesses can play a meaningful role in improving local economic conditions. A business model that emphasizes job creation, community engagement, and economic participation can contribute positively to both the company's growth and the broader development of the local community.

APPENDIX

Monthly Sales Forecast Table

Sales Forecast													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Unit Sales													
Artificial Intelligence Integration and Business Process Automation		0	1	0	0	1	1	1	2	1	1	1	1
Custom Software and SaaS Platform Development		1	0	0	1	1	1	1	0	1	1	1	1
Cloud Infrastructure Modernization and Deployment		0	0	1	0	1	1	0	1	0	1	1	0
DevOps and Software Delivery Optimization		0	0	1	1	0	0	1	1	1	1	1	1
Intelligent Data Platforms and AI Agent Development		0	0	0	0	0	1	1	0	1	1	0	1
Total Unit Sales		1	1	2	2	3	4	4	4	4	5	4	4
Unit Prices		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Artificial Intelligence Integration and Business Process Automation		$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00
Custom Software and SaaS Platform Development		$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
Cloud Infrastructure Modernization and Deployment		$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
DevOps and Software Delivery Optimization		$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
Intelligent Data Platforms and AI Agent Development		$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00	$22,000.00
Sales													
Artificial Intelligence Integration and Business Process Automation		$0	$20,000	$0	$0	$20,000	$20,000	$20,000	$40,000	$20,000	$20,000	$20,000	$20,000
Custom Software and SaaS Platform Development		$15,000	$0	$0	$15,000	$15,000	$15,000	$15,000	$0	$15,000	$15,000	$15,000	$15,000
Cloud Infrastructure Modernization and Deployment		$0	$0	$12,000	$0	$12,000	$12,000	$0	$12,000	$0	$12,000	$12,000	$0

DevOps and Software Delivery Optimization		$0	$0	$15,000	$15,000	$0	$0	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000
Intelligent Data Platforms and AI Agent Development		$0	$0	$0	$0	$0	$22,000	$22,000	$0	$22,000	$22,000	$0	$22,000
Total Sales		$15,000	$20,000	$27,000	$30,000	$47,000	$69,000	$72,000	$67,000	$72,000	$84,000	$62,000	$72,000
Direct Unit Costs		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Artificial Intelligence Integration and Business Process Automation	8.00%	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
Custom Software and SaaS Platform Development	8.00%	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00
Cloud Infrastructure Modernization and Deployment	8.00%	$960.00	$960.00	$960.00	$960.00	$960.00	$960.00	$960.00	$960.00	$960.00	$960.00	$960.00	$960.00
DevOps and Software Delivery Optimization	8.00%	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00	$1,200.00
Intelligent Data Platforms and AI Agent Development	8.00%	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00	$1,760.00
Direct Cost of Sales													
Artificial Intelligence Integration and Business Process Automation		$0	$1,600	$0	$0	$1,600	$1,600	$1,600	$3,200	$1,600	$1,600	$1,600	$1,600
Custom Software and SaaS Platform Development		$1,200	$0	$0	$1,200	$1,200	$1,200	$1,200	$0	$1,200	$1,200	$1,200	$1,200
Cloud Infrastructure Modernization and Deployment		$0	$0	$960	$0	$960	$960	$0	$960	$0	$960	$960	$0
DevOps and Software Delivery Optimization		$0	$0	$1,200	$1,200	$0	$0	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200
Intelligent Data Platforms and AI Agent Development		$0	$0	$0	$0	$0	$1,760	$1,760	$0	$1,760	$1,760	$0	$1,760
Subtotal Direct Cost of Sales		**$1,200**	**$1,600**	**$2,160**	**$2,400**	**$3,760**	**$5,520**	**$5,760**	**$5,360**	**$5,760**	**$6,720**	**$4,960**	**$5,760**

Monthly Personnel Plan Table

Personnel Plan													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
General Manager & AI Solutions Director - Mr. Guilherme Pereira da Silva Alves		$0	$6,000	$6,000	$6,000	$8,000	$8,000	$10,000	$10,000	$10,000	$12,000	$12,000	$12,000
Software Developers (Full-Stack Developers)		$8,350	$8,350	$8,350	$8,350	$8,350	$8,350	$8,350	$8,350	$8,350	$8,350	$8,350	$8,350
AI Solutions Engineer		$0	$0	$0	$0	$0	$9,150	$9,150	$9,150	$9,150	$9,150	$9,150	$9,150
Cloud Infrastructure Engineer		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DevOps Engineer		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Coordinator		$0	$0	$0	$0	$0	$0	$0	$0	$5,000	$5,000	$5,000	$5,000
Data & Automation Engineer		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales Representative		$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000
Administrative Manager		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Customer Service Representative		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total People		3	3	3	3	3	4	4	4	5	5	5	5
Total Payroll		**$14,350**	**$20,350**	**$20,350**	**$20,350**	**$22,350**	**$31,500**	**$33,500**	**$33,500**	**$38,500**	**$40,500**	**$40,500**	**$40,500**

Monthly Profit and Loss Table

Pro Forma Profit and Loss													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Sales		$15,000	$20,000	$27,000	$30,000	$47,000	$69,000	$72,000	$67,000	$72,000	$84,000	$62,000	$72,000
Direct Cost of Sales		$1,200	$1,600	$2,160	$2,400	$3,760	$5,520	$5,760	$5,360	$5,760	$6,720	$4,960	$5,760
Other Costs of Sales		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Cost of Sales		$1,200	$1,600	$2,160	$2,400	$3,760	$5,520	$5,760	$5,360	$5,760	$6,720	$4,960	$5,760
Gross Margin		$13,800	$18,400	$24,840	$27,600	$43,240	$63,480	$66,240	$61,640	$66,240	$77,280	$57,040	$66,240
Gross Margin %		92.00%	92.00%	92.00%	92.00%	92.00%	92.00%	92.00%	92.00%	92.00%	92.00%	92.00%	92.00%
Expenses													
Payroll		$14,350	$20,350	$20,350	$20,350	$22,350	$31,500	$33,500	$33,500	$38,500	$40,500	$40,500	$40,500
Payroll Taxes	10%	$1,435	$2,035	$2,035	$2,035	$2,235	$3,150	$3,350	$3,350	$3,850	$4,050	$4,050	$4,050
Depreciation		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Rent		$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Insurance		$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Marketing/Promotion		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Utilities/Internet/Phone		$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200
Employees Education	0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Software & Licenses	0%	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Equipment	0%	$0	$0	$0	$0	$0	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Accountant	0%	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200	$200
Total Operating Expenses		$20,935	$27,535	$27,535	$27,535	$29,735	$41,800	$44,000	$44,000	$49,500	$51,700	$51,700	$51,700
Profit Before Interest and Taxes		($7,135)	($9,135)	($2,695)	$65	$13,505	$21,680	$22,240	$17,640	$16,740	$25,580	$5,340	$14,540
EBITDA		($7,135)	($9,135)	($2,695)	$65	$13,505	$21,680	$22,240	$17,640	$16,740	$25,580	$5,340	$14,540
Interest Expense		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Taxes Incurred		($1,926)	($2,466)	($728)	$18	$3,646	$5,854	$6,005	$4,763	$4,520	$6,907	$1,442	$3,926
Net Other Income		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net Profit		($5,209)	($6,669)	($1,967)	$47	$9,859	$15,826	$16,235	$12,877	$12,220	$18,673	$3,898	$10,614
Net Profit/Sales		**-34.72%**	**-33.34%**	**-7.29%**	**0.16%**	**20.98%**	**22.94%**	**22.55%**	**19.22%**	**16.97%**	**22.23%**	**6.29%**	**14.74%**

Monthly Cash Flow Table

Pro Forma Cash Flow													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Cash Received													
Cash from Operations													
Cash Sales		$7,500	$10,000	$13,500	$15,000	$23,500	$34,500	$36,000	$33,500	$36,000	$42,000	$31,000	$36,000
Cash from Receivables		$7,500	$10,000	$13,500	$15,000	$23,500	$34,500	$36,000	$33,500	$36,000	$42,000	$31,000	$36,000
Subtotal Cash from Operations		$15,000	$20,000	$27,000	$30,000	$47,000	$69,000	$72,000	$67,000	$72,000	$84,000	$62,000	$72,000
Additional Cash Received													
Non-Operating (Other) Income		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Received	0.00%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Other Liabilities (interest-free)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Long-term Liabilities		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales of Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Investment Received		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Received		$15,000	$20,000	$27,000	$30,000	$47,000	$69,000	$72,000	$67,000	$72,000	$84,000	$62,000	$72,000
Expenditures		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Expenditures from Operations													
Cash Spending		$14,350	$20,350	$20,350	$20,350	$22,350	$31,500	$33,500	$33,500	$38,500	$40,500	$40,500	$40,500
Bill Payments		$195	$5,874	$6,395	$8,650	$9,776	$15,021	$21,693	$22,210	$20,645	$21,398	$24,586	$17,711
Subtotal Spent on Operations		$14,545	$26,224	$26,745	$29,000	$32,126	$46,521	$55,193	$55,710	$59,145	$61,898	$65,086	$58,211
Additional Cash Spent													
Non-Operating (Other) Expense		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Sales Tax, VAT, HST/GST Paid Out		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal Repayment of Current Borrowing		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Long-term Liabilities Principal Repayment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Other Current Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchase Long-term Assets		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dividends		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Cash Spent		$14,545	$26,224	$26,745	$29,000	$32,126	$46,521	$55,193	$55,710	$59,145	$61,898	$65,086	$58,211
Net Cash Flow		$455	($6,224)	$255	$1,000	$14,874	$22,479	$16,807	$11,290	$12,855	$22,102	($3,086)	$13,789
Cash Balance		$18,455	$12,231	$12,486	$13,485	$28,360	$50,839	$67,646	$78,936	$91,791	$113,893	$110,807	$124,596

Monthly Balance Sheet Table

Pro Forma Balance Sheet													
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Assets	Starting Balances												
Current Assets													
Cash	$18,000	$18,455	$12,231	$12,486	$13,485	$28,360	$50,839	$67,646	$78,936	$91,791	$113,893	$110,807	$124,596
Accounts Receivable	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Inventory	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Current Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Current Assets	$18,000	$18,455	$12,231	$12,486	$13,485	$28,360	$50,839	$67,646	$78,936	$91,791	$113,893	$110,807	$124,596
Long-term Assets													
Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Accumulated Depreciation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Long-term Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Assets	$18,000	$18,455	$12,231	$12,486	$13,485	$28,360	$50,839	$67,646	$78,936	$91,791	$113,893	$110,807	$124,596
Liabilities and Capital		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Current Liabilities													
Accounts Payable	$0	$5,663	$6,108	$8,330	$9,282	$14,298	$20,951	$21,523	$19,935	$20,570	$23,999	$17,015	$20,190
Current Borrowing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Current Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Current Liabilities	$0	$5,663	$6,108	$8,330	$9,282	$14,298	$20,951	$21,523	$19,935	$20,570	$23,999	$17,015	$20,190
Long-term Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Liabilities	$0	$5,663	$6,108	$8,330	$9,282	$14,298	$20,951	$21,523	$19,935	$20,570	$23,999	$17,015	$20,190
Paid-in Capital	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000
Retained Earnings	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)	($52,000)
Earnings	$0	($5,209)	($11,877)	($13,844)	($13,797)	($3,938)	$11,888	$28,123	$41,000	$53,221	$71,894	$75,792	$86,406
Total Capital	$18,000	$12,791	$6,123	$4,156	$4,203	$14,062	$29,888	$46,123	$59,000	$71,221	$89,894	$93,792	$104,406
Total Liabilities and Capital	$18,000	$18,455	$12,231	$12,486	$13,485	$28,360	$50,839	$67,646	$78,936	$91,791	$113,893	$110,807	$124,596
Net Worth	$18,000	$12,791	$6,123	$4,156	$4,203	$14,062	$29,888	$46,123	$59,000	$71,221	$89,894	$93,792	$104,406

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What: Software engineer

Where: Canada

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Home Career Explorer Software Engineer Salary

Software engineer salary in Canada

How much does a Software Engineer make in Canada?

Average base salary

$106,739 Pay per: Year

The average salary for a software engineer is $106,739 per year in Canada. 4.9k salaries reported, updated at September 20, 2026

Software Engineer job openings in Canada

See more jobs →

Repair Development Engineer
FTAI Aviation 4.5 ★
Montréal, QC
Full-time
21 hours ago

Software Developer Co-op - Signal Processing (Winter Term - January 2027 - April 2027)
Ross Video 3.6 ★
Nepean, ON
$24–$35 an hour
Internship / Co-op
21 hours ago

Lead Software Developer
Spiria 5 ★
Oakville, ON
$300 an hour
Full-time
21 hours ago

1 / 2

Highest paying companies for Software Engineer in Canada

Average year pay is based on job postings on Indeed in the past 36 months.

Staff Shop Inc.
$200,000 per year
View company

Systematix
$197,600 per year
View company

Speridian Technologies
$187,200 per year

View company

Lightspeed

$182,500 per year

View company

Wayfair

$177,595 per year

View company

Spirit Omega

$176,662 per year

View company

Highest paying cities for Software Engineers near Canada

New Zealand, PE $313,988 per year ›	**Vancouver, BC** $120,374 per year ›	**Markham, ON** $118,502 per year ›
Calgary, AB $112,383 per year ›	**Toronto, ON** $110,857 per year ›	**Edmonton, AB** $110,288 per year ›
Waterloo, ON $109,901 per year ›	**Ottawa, ON** $99,156 per year ›	**Montréal, QC** $94,898 per year ›

Where can a Software Engineer earn more?

Compare salaries for Software Engineers in different locations

Enter first location

Enter a location

vs.

Enter second location

Enter a location

Compare

Frequently Asked Questions (FAQs) about Software Engineer

What is the average salary for a Software Engineer in Canada?

The average salary for a Software Engineer is $106,739 per year in Canada. This figure is based on 4.9k salaries taken from job postings on Indeed in the past 36 months, last updated on September 20, 2026.

Software Engineer jobs on Indeed - find your next one today.

What is the salary range for a Software Engineer?

Software Engineer salaries typically range between a low of $69,724 and a high of $163,404 per year, depending on experience, location, and the hiring company.

Which cities pay the most for Software Engineer?

Some of the highest-paying cities for Software Engineer include New Zealand, PE at $313,988 per year, Vancouver, BC at $120,374 per year and Markham, ON at $118,502 per year.

Which companies pay the highest salaries for Software Engineer?

Based on recent job postings on Indeed, some of the top-paying companies for Software Engineer include Staff Shop Inc. ($200,000 per year) and Systematix ($197,600 per year).

How does the salary of a Software Engineer compare to similar roles?

Compensation can vary based on the specific niche and level of responsibility within the field. Here is how the average Software Engineer salary compares to related positions:

- Entry Level Software Engineer: Average $106,193 per year
- Junior Software Engineer: Average $67,752 per year
- Principal Software Engineer: Average $179,145 per year
- Senior Software Engineer: Average $135,548 per year
- Software Engineer Intern: Average $30.99 per hour
- Staff Software Engineer: Average $186,883 per year

How much do similar professions as Software Engineer get paid in Canada?

Entry Level Software Engineer
Job openings
Average $106,193 per year

Junior Software Engineer
Job openings
Average $67,752 per year

Principal Software Engineer
Job openings
Average $179,145 per year

Senior Software Engineer
Job openings
Average $135,548 per year

Software Engineer Intern
Job openings
Average $30.99 per hour

Staff Software Engineer

Job openings

Average $186,883 per year

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What: Engenheiro de software

Where: Brasil

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Homepage Career navigator Software Engineer Salary

Software Engineer Salary in Brazil

How much does a Software Engineer earn in Brazil?

Average base salary

R$ 155,708 Pay for: Year

The salary range for a software engineer in Brazil is R$ 155,708 per year. 928 salaries reported. Updated September 20, 2026.

Software Engineer positions open in Brazil.

See more job openings →

[Job 31895] AI ENGINEER (SRE APP Architecture)
Ci&T 4.1 ★
Remote
21 hours ago

[Job 31894] AI ORCHESTRATOR (SRE APP)
Ci&T 4.1 ★
Remote
21 hours ago

Software Engineer
Capgemini 3.7 ★
Barueri, SP
21 hours ago

1/2

Companies with the highest salaries for Software Engineers in Brazil

The average annual salary is based on job postings on Indeed over the past 36 months.

Google

R$ 262,785 per year

View company

Uber

R$ 244,356 per year

View company

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Nubank

R$ 211,415 per year

View company

SOS DOCs

R$ 184,800 per year

View company

FCamara

R$ 183,000 per year

View company

Cities with the highest salaries for the position of Software Engineer near Brazil.

Osasco, SP R$ 213,590 per year 105 salaries reported	**Florianópolis, SC** R$ 190,156 per year 53 salaries reported	**Campinas, SP** R$ 161,181 per year 104 salaries reported
Belo Horizonte, MG R$ 157,633 per year 147 salaries reported	**Porto Alegre, RS** R$ 155,183 per year 71 salaries reported	**São Paulo, SP** R$ 148,396 per year 43 salaries reported
Curitiba, PR R$ 147,178 per year 44 salaries reported	**Uberlândia, MG** R$ 138,077 per year 31 salaries reported	**Recife, PE** R$ 123,791 per year 81 salaries reported

Where does a Software Engineer pay the most?

Compare salaries for the Software Engineer position in different locations.

Enter the first location.

Enter a location

x

Enter the second location.

Enter a location

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What is the average salary for a Software Engineer in Brazil?

The average salary for a Software Engineer in Brazil is R$ 155,708 per year. This data is based on 928 salaries extracted from job postings on Indeed over the past 36 months, last updated on September 20, 2026.

Software Engineer jobs on Indeed — find your next job today.

What is the salary range for a Software Engineer?

Software Engineer salaries typically range from a minimum of R$ 85,026 to a maximum of R$ 285,146 per year, depending on experience, location, and the hiring company.

Which cities pay the most for Software Engineers?

Some of the highest-paying cities for Software Engineers include Osasco, SP, with salaries of R$ 213,590 per year ; Florianópolis, SC, with salaries of R$ 190,156 per year ; and Campinas, SP, with salaries of R$ 161,181 per year .

Which companies pay the highest salaries for Software Engineers?

Based on recent job postings on Indeed, some of the highest-paying companies for Software Engineers include Google ($262,785 per year) and Uber ($244,356 per year).

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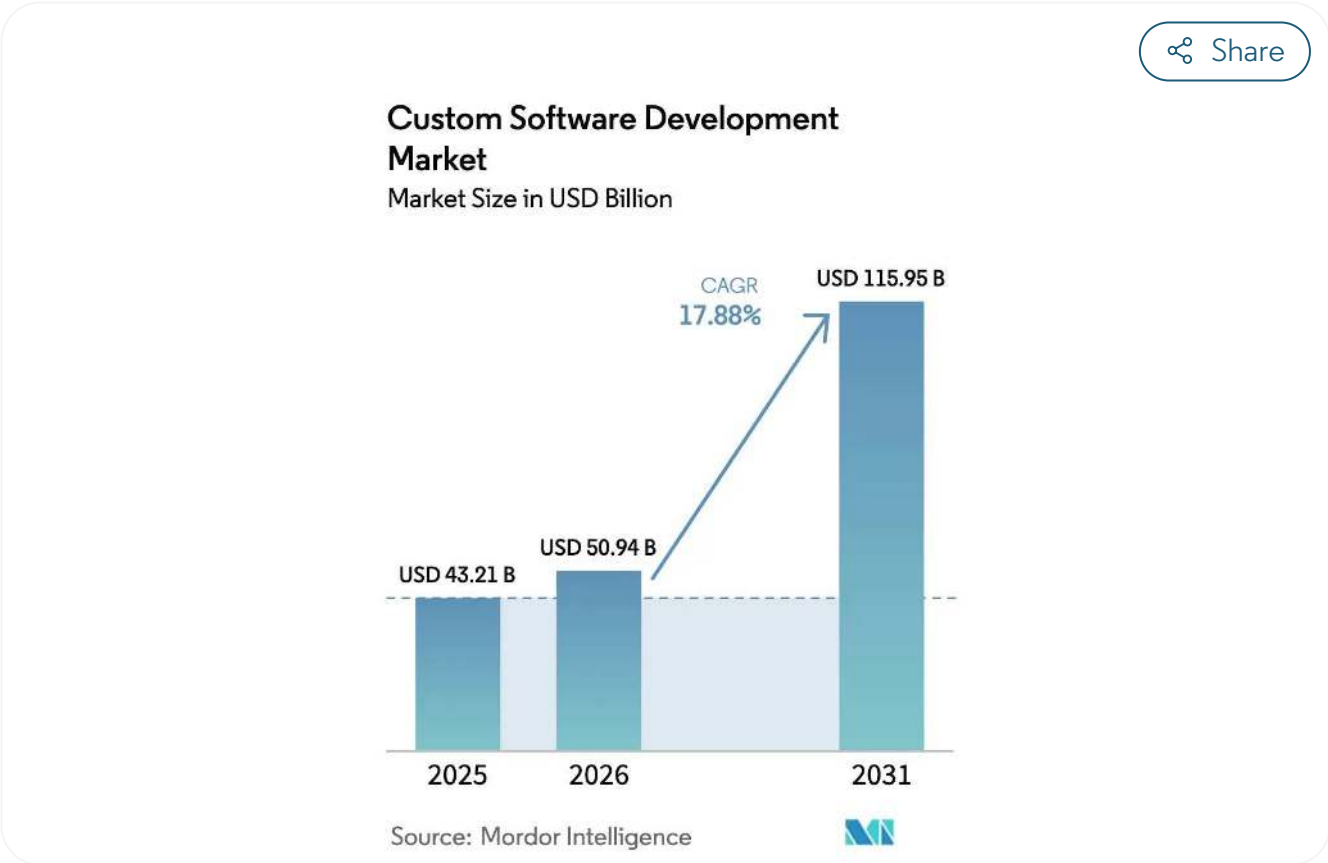
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CUSTOM SOFTWARE DEVELOPMENT MARKET SIZE & SHARE ANALYSIS - GROWTH TRENDS AND FORECAST (2026 - 2031)

The Custom Software Development Market is Segmented by Solution (Web-Based Solutions, Mobile Applications and More), by Deployment Model (On-Premise, Cloud-Hosted), by Enterprise Size (Small and Medium Enterprises, Large Enterprises,) by End-User Vertical (BFSI, Healthcare and Life-Sciences, and More), and by Geography. The Market Forecasts are Provided in Terms of Value (USD).

4750

Custom Software Development Market Size and Share



Market Size (2026)	USD 50.94 Billion
Market Size (2031)	USD 115.95 Billion
Growth Rate (2026 - 2031)	17.88 %
Fastest Growing Market	Asia Pacific
Largest Market	North America
Market Concentration	Medium

Major Players



*Disclaimer: Major Players sorted in no particular order

Custom Software Development Market Analysis by Mordor Intelligence

Custom software development market size in 2026 is estimated at USD 50.94 billion, growing from 2025 value of USD 43.21 billion with 2031 projections showing USD 115.95 billion, growing at 17.88% CAGR over 2026-2031. Strong growth reflects enterprises' migration from packaged applications toward highly tailored solutions that meet specific business process, compliance and differentiation goals. Mandatory software-supply-chain security requirements, rapid generative-AI adoption in coding workflows and a sharp increase in edge-computing projects are expanding the addressable opportunity. Heightened developer productivity through AI tools, combined with cloud-native architectures and micro-services, is shortening release cycles while raising demand for specialized skills. Regional investment incentives and vertical digital-transformation budgets are further supporting the custom software development market.

Key Report Takeaways

- By solution, enterprise software led with 36.60% revenue share in 2025; embedded and IoT software is set to advance at a 22.35% CAGR to 2031.
- By deployment model, cloud-hosted solutions captured 61.40% of the custom software development market share in 2025 while growing at a 21.10% CAGR through 2031.
- By enterprise size, large enterprises held 57.30% share of the custom software development market size in 2025; SMEs are projected to expand at a 20.15% CAGR between 2026 and 2031.

- By geography, North America accounted for 38.60% of 2025 revenue; Asia-Pacific is expected to post the fastest regional CAGR at 20.90% to 2031.

Note: Market size and forecast figures in this report are generated using Mordor Intelligence's proprietary estimation framework, updated with the latest available data and insights as of 2026.

Market Trends and Insights

Drivers Impact Analysis of Custom Software Development Market*

DRIVER	(~) % IMPACT ON CAGR FORECAST	GEOGRAPHIC RELEVANCE	IMPACT TIMELINE
Digital transformation programs across verticals	+4.2%	Global, with early gains in North America, Europe, Asia-Pacific	Medium term (2-4 years)
Cloud-native and micro-services architecture uptake	+3.8%	North America and EU, spill-over to APAC	Short term (≤ 2 years)
Integration of advanced analytics, ML and Gen-AI coding tools	+5.1%	Global, concentrated in tech-forward markets	Short term (≤ 2 years)
Proliferation of IoT edge deployments	+2.9%	APAC core, spill-over to MEA	Medium term (2-4 years)
Low-code / No-code platform proliferation	+1.8%	Global, particularly SME-heavy regions	Long term (≥ 4 years)
SBOM-centric software-supply-chain compliance mandates	+0.4%	North America, Europe, expanding globally	Long term (≥ 4 years)

Source: Mordor Intelligence

Digital Transformation Programs Across Verticals

Enterprise investment in modernizing core operations is steering software budgets toward bespoke solutions that embed sector-specific workflows. Global IT spending is projected at USD 4.5 trillion for 2025, with individual enterprises allocating an average USD 33 million to modernization projects.[1] Case evidence from SBI Bank shows a 400% lift in lead conversion and a 90% reduction in loan-

custom digital-twin applications. Such outcomes highlight why the custom software development market continues to secure priority funding across industries.

Cloud-Native and Micro-Services Architecture Uptake

Organizations pursuing agility and cost optimization are refactoring monolithic systems into containerized micro-services that release multiple times per day. Elite DevOps teams now push production changes in under 24 hours, a feat enabled by cloud-native patterns.[2] This shift creates a sizeable customization workload around service mesh design, continuous-integration pipelines and API governance. Singapore's Land Transport Authority achieved 60% cost savings through phased cloud migration, demonstrating real-world efficiency gains. Providers skilled in incremental modernization strategies are therefore well positioned to capture premium engagements within the custom software development market.

Integration of Advanced Analytics, ML and Gen-AI Coding Tools

Generative-AI copilots are writing up to 30% of new code, making development teams faster yet simultaneously introducing novel security risks. Accenture secured USD 3 billion in generative-AI bookings during 2024[3] and is upskilling talent to meet rising demand. Enterprises adopting AI-augmented workflows cite shorter sprints and lower defect rates, but also invest heavily in model validation and secure coding practices to offset hallucination-risk exposure. Vendors capable of pairing AI productivity with robust DevSecOps are gaining share in the custom software development market.

Proliferation of IoT Edge Deployments

Global IoT revenue is projected to reach USD 1.8 trillion by 2028, with 72% arising from enterprise use cases that require specialized edge software. Embedded-system complexity spurs demand for real-time analytics, RISC-V porting and 5G-enabled data orchestration. Bharat Forge's adoption of an industrial IoT platform cut unplanned downtime to zero and lifted equipment effectiveness by 15%. These deployments are fueling the fastest-growing segment of the custom software development market.

Restraints Impact Analysis of Custom Software Development Market*

RESTRAINTS	(~) % IMPACT ON CAGR FORECAST	GEOGRAPHIC RELEVANCE	IMPACT TIMELINE
Rising security and privacy breaches	-2.1%	Global, particularly North America and Europe	Short term (≤ 2 years)
Persistent shortage of senior developers	-3.4%	Global, acute in North America and Europe	Medium term (2-4 years)

Source: Mordor Intelligence

Tight IT-investment budgets at SMEs	-1.7%	Global, concentrated in emerging markets	Medium term (2-4 years)
Open-source "good-enough" alternatives cannibalising demand	-0.8%	Global, particularly cost-sensitive segments	Long term (≥ 4 years)

Source: Mordor Intelligence

Rising Security and Privacy Breaches

High-profile supply-chain attacks and executive orders mandating strict SBOM compliance are elongating testing cycles and raising project costs. Executive Order 14144 now obliges federal contractors to align with NIST secure-software standards, directly influencing vendor-selection criteria. Enterprises are adopting zero-trust architectures and code-signing protocols, but SMEs often lack budget for dedicated security teams, tempering adoption velocities in segments of the custom software development market.

Persistent Shortage of Senior Developers

An estimated 1.2 million developer roles will remain unfilled in the United States alone by 2026, with demand for AI and cybersecurity skills outpacing supply increases. Top providers counter the gap by expanding near-shore delivery centers and automating repeatable tasks through AI copilots. Nonetheless, rising wage inflation and longer recruitment cycles push up total-cost-of-ownership for buyers and could constrain some custom projects.

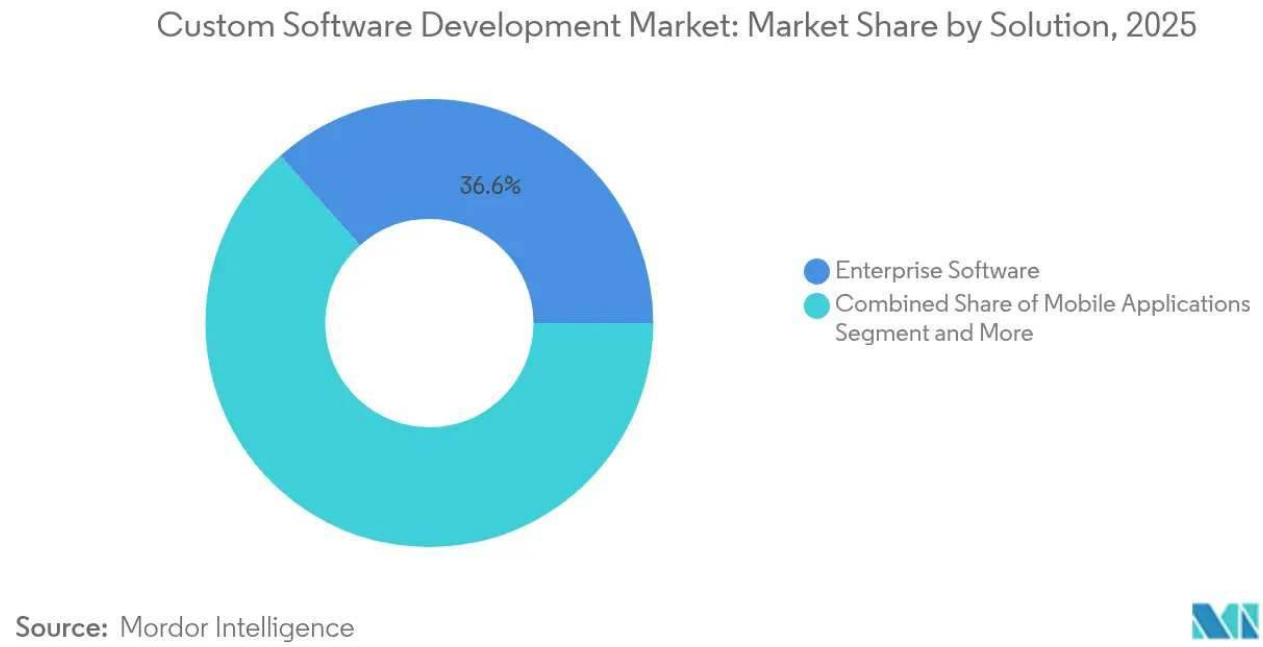
*Our forecasts treat driver/restraint impacts as directional, not additive. The impact forecasts reflect baseline growth, mix effects, and variable interactions.

Custom Software Development Market Segment Analysis

By Solution: Enterprise Software Drives Market Leadership

Enterprise software retained the largest share at 36.60% in 2025, confirming the preference for sophisticated ERP, CRM and industry-specific suites that embed proprietary workflows. Web-based solutions hold the second-largest position, thanks to cross-platform progress in progressive-web-app frameworks. The embedded and IoT category is, however, scaling fastest at 22.35% CAGR as Industry 4.0 initiatives demand sensor-rich edge applications. Embedded deployments are drawing heightened interest in automotive and medical-device manufacturing, a trend expected to raise this segment's contribution to the custom software development market size through 2031.

Momentum in embedded systems is tied closely to digital twin and predictive-maintenance rollouts. Emerson Electric's deployment of plant-level twins illustrates how real-time production analytics can lift throughput while lowering waste. Development vendors that master secure firmware updates and AI



Note: Segment shares of all individual segments available upon report purchase

Get Detailed Market Forecasts at the Most Granular Levels

By Deployment Model: Cloud-Hosted Solutions Accelerate

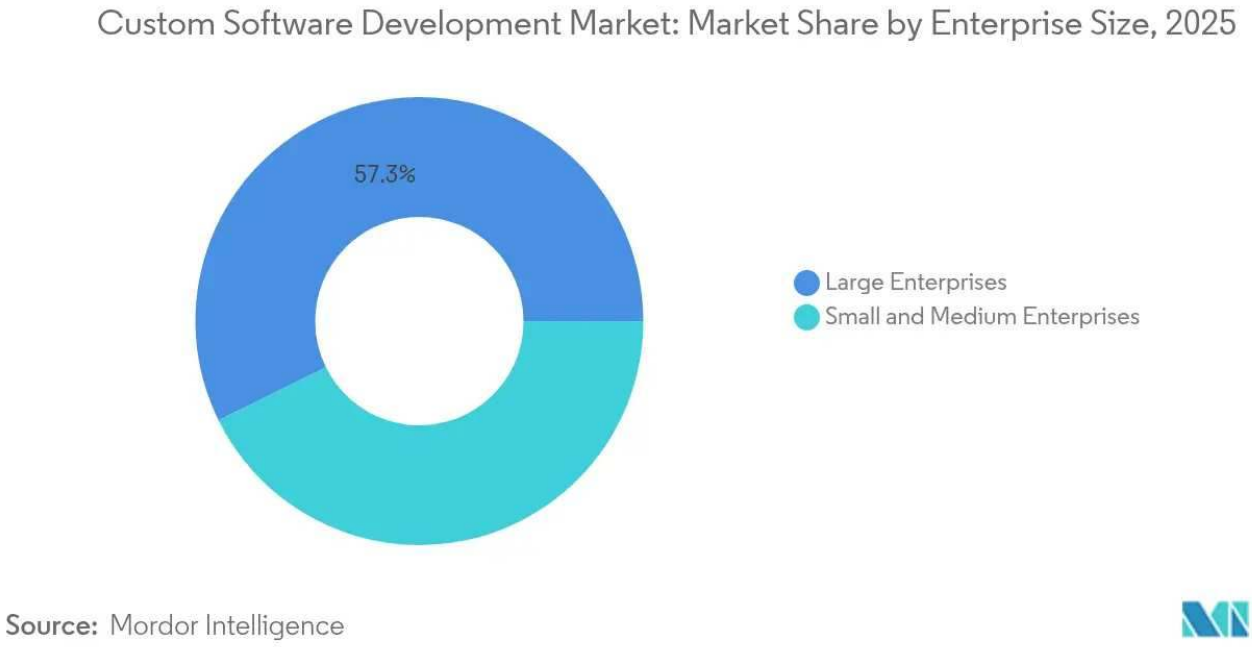
Cloud-hosted installations represented 61.40% of revenue in 2025 and are expanding at a 21.10% CAGR to 2031. This dominance is underpinned by scalable infrastructure, usage-based pricing and integrated DevOps tooling that reduce time-to-value. On-premise workloads persist in heavily regulated settings, yet hybrid-cloud blueprints now satisfy most sovereignty requirements, which further propels cloud adoption within the custom software development market.

Financial-services examples such as BPER Banca reveal operational and experiential gains from multi-channel, cloud-native platforms. Healthcare organizations including Florida Blue have recorded 40% faster transaction processing after modernization. These proofs of concept position cloud-first strategies as default choices for new custom builds.

By Enterprise Size: SMEs Emerge as Growth Engine

Large enterprises still account for 57.30% of worldwide spend; nonetheless, SMEs show the highest growth trajectory at 20.15% CAGR. Low-code and no-code environments are democratizing software creation, enabling smaller firms to launch tailored applications without full-stack teams. Gartner projects that 70% of new business apps will rely on these platforms by 2025, a dynamic that expands the user base for the custom software development market.

securing footholds in this underserved yet rapidly scaling market layer.



Note: Segment shares of all individual segments available upon report purchase

Get Detailed Market Forecasts at the Most Granular Levels

By End-User Vertical: Healthcare Accelerates Past BFSI Leadership

BFSI led with 23.70% of 2025 revenue, propelled by risk-management mandates and omnichannel banking. Heightened regulatory oversight, including the EU's Digital Operational Resilience Act, sustains ongoing investment in bespoke applications. Healthcare and life sciences, rising at 19.95% CAGR, are expected to overtake BFSI by 2031 owing to interoperability mandates and AI-enabled diagnostics. Telehealth platforms, EHR integration and clinical-decision tools rank high on hospital CIO agendas, driving incremental demand in the custom software development market.

Manufacturing maintains steady growth, energised by Industry 4.0 and quality-analytics imperatives. Retail and e-commerce actors seek personalization engines, while public-sector spending is rising on citizen-service digitization projects. Together, these trends underpin diverse, resilient demand patterns across verticals.

Geography Analysis

North America Custom Software Development Market

North America contributed 38.60% of global revenue in 2025 and remains the largest regional buyer, supported by deep enterprise tech budgets and an advanced venture-capital ecosystem. Accenture

secure-software development are fuelling additional service demand.

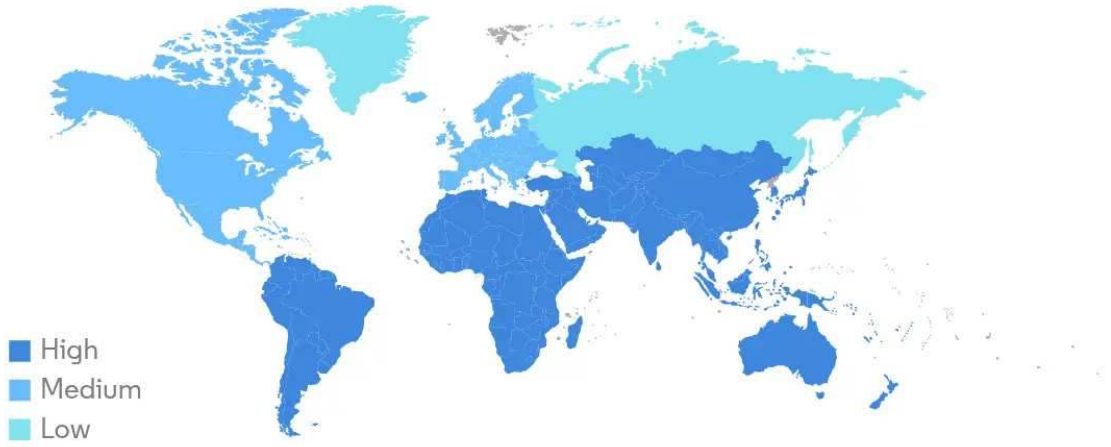
APAC Custom Software Development Market

Asia-Pacific is expanding fastest at 20.90% CAGR as massive digitization programs and manufacturing investments converge. India's TCS logged USD 7.51 billion in Q1 FY2025 revenue, with domestic growth of 61.8%, demonstrating robust in-region momentum. China's focus on open-source AI frameworks and Singapore's successful cloud migrations are further raising regional spend on custom development.

EMEA and LATAM Custom Software Development Market

Europe shows steady progression anchored in data-sovereignty legislation and sustainability mandates. Hybrid-cloud adoption and privacy-by-design requirements create lucrative niches for specialized providers. Latin America's near-shore sector benefits from time-zone alignment with North America, while Middle East and Africa initiatives around smart-city infrastructure and e-government services cultivate early-stage opportunities, though macroeconomic volatility tempers pace.

Custom Software Development Market CAGR (%), Growth Rate by Region, 2026 - 2031



Source: Mordor Intelligence

Get Analysis on Important Geographic Markets

Competitive Landscape

The custom software development industry remains moderately fragmented. Accenture, TCS, Cognizant, Capgemini and IBM headline the global tier, leveraging broad service portfolios, global delivery centers and ecosystem partnerships. Mid-market and regional specialists differentiate through domain expertise in AI, quantum-safe cryptography and sustainability analytics. Acquisition strategies

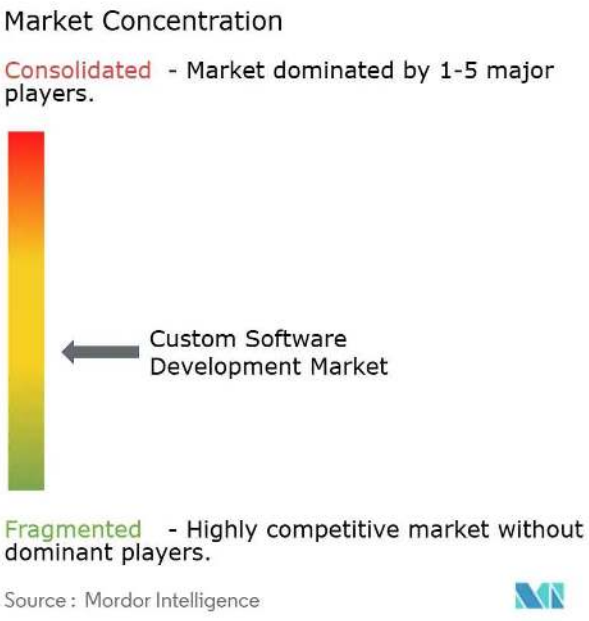
management scope, while IBM's planned buyout of Applications Software Technology LLC strengthens public-sector Oracle capabilities.

AI-centric services are emerging as the new battleground. Accenture has allocated USD 1 billion to its LearnVantage platform and further expanded Nordic reach through the Halfspace acquisition. Providers that pair AI-enabled productivity with proven security assurances are capturing premium contracts, thereby increasing their influence on the custom software development market.

Custom Software Development Industry Leaders

1. Accenture
2. Capgemini
3. TCS
4. HCL Tech
5. Infosys

*Disclaimer: Major Players sorted in no particular order



Custom Software Development Market Companies Covered in this Report

- Accenture plc
- Cognizant Technology Solutions Corp.
- Infosys Ltd.
- Tata Consultancy Services Ltd.
- Capgemini SE
- International Business Machines Corp.

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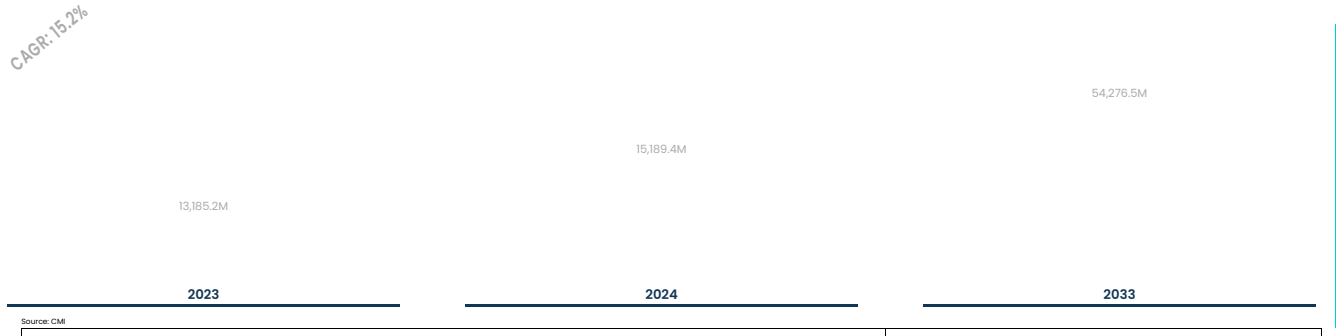
US Custom Software Development Market 2024–2033

US Custom Software Development Market Size, Trends and Insights By Type (Web-based Solutions, Mobile App, Enterprise Software, Others), By Deployment Model (On-premises, Cloud-based), By Organization Size (Small and Medium-sized Enterprises (SMEs), Large Enterprises), By End-User Industry (Healthcare, BFSI (Banking, Financial Services, and Insurance), Retail, Manufacturing, Government, Others), and By Country - Industry Overview, Statistical Data, Competitive Analysis, Share, Outlook, and Forecast 2024–2033

Report Code: CMI58001
Published Date: August 24, 2026
Category: Country
Author: Ayush Kadam

Product Description Table of Contents Request Sample Key Players

Report Snapshot



Source: CMI

Study Period:	2024–2033
Fastest Growing Market:	USA
Largest Market:	USA

Major Players

- Accenture
- IBM
- Capgemini
- Cognizant
- Infosys
- Tata Consultancy Services (TCS)
- Others

Exclusive, in-depth market intelligence can help you increase your Revenue.

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Reports Description

The CMI Team's most recent market research predicts that from 2024 to 2033, the **US Custom Software Development Market** will grow at a CAGR of 15.2%. In 2024, the market size is projected to reach a valuation of USD **15,189.4 Million**. By 2033, the valuation is anticipated to reach USD **54,276.5 Million.**

Custom software development in the U.S. market refers to creating tailored software programs designed to meet the specific business needs of customers. It involves solutions ranging from mobile applications and web applications to enterprise resource planning and customer relationship management.

Major players include large companies such as Accenture and IBM, mid-sized companies like Intellectsoft, independent freelancers, and innovative technology startups that specialize in new technologies like artificial intelligence and the Internet of Things.

This market is growing robustly, driven by the trends of digital transformation, increased demand for personalized solutions, and lately, new technologies such as cloud computing. Growth in remote work fuels further demands on software that can support collaboration and automate processes. The custom software development market is quite alive and provides the business opportunity to enhance efficiency and customer experience in a fast-changing landscape.

US Custom Software Development Market – Significant Growth Factors

WhatsApp Us

The US Custom Software Development Market presents significant growth opportunities due to several factors:

- **Increased Digital Transformation**: Increasing the demand for digital transformation strategies among businesses in an attempt to make the operations more efficient and increase the engagement experience for customers shifts the burden to vast investments into developing specific business needs requirements, which requires custom software. An increased need calls for more developers to come up with special applications.
- **Rising Demand for Mobility Solutions**: With the increasing number of mobile users, companies need customized mobile applications that fit into their current systems. This requirement for mobile-first solutions encourages the innovation and provision of apps to fit the specific needs of various industries by such software development companies.
- **Integration of Emerging Technologies**: AI, ML, and IoT have been rapidly integrated and embraced into business processes to develop customized software for business-based applications. Organizations seek tailored solutions to reap data analytics and automation to maximize the quality of decisions and optimize operational efficiency.
- **Industry-Specific Needs**: Industry-specific requirements are different and require different needs within the operations of each respective industry, in the case of healthcare, finance, and manufacturing. Customized software development will help business-to-business companies better the needed uniqueness as related to the given specific needs. Solutions that resolve industry standards specifically for better compliance, data management, and customer engagement might be built.
- **Increased Focus on Cybersecurity**: As cyber threats are increasing, companies are shifting their software solutions towards security. The software created by custom software development can help a firm to implement policies that suit the safety of its risk profile, assure the protection of data, and be within compliant regulations hence driving growth in the market.
- **Cost Efficiency and Scalability**: Business people now understand that custom software often has a lower return on investment in the long term than ready-to-use applications. Custom applications expand and evolve at pace with the business, adapting to increased demand as well as increased system complexity, which yields greater ROI for the business organization.

US Custom Software Development Market – Key Developments

The US Custom Software Development Market has seen several key developments in recent years, with companies seeking to expand their market presence and leverage synergies to improve their product offerings and profitability. Some notable examples of mergers and acquisitions in the US Custom Software Development Market include:

- In 2024, Accenture launched the AI Refinery, powered by NVIDIA AI Foundry. This framework enables organizations to develop custom large language models (LLMs) tailored to their enterprise data. It features domain model customization, a switchboard platform for model selection, and an enterprise cognitive brain for data indexing.
- In 2024, Accenture announced the formation of a new NVIDIA Business Group to facilitate AI adoption among enterprises. This initiative will focus on deploying autonomous agents through the AI Refinery platform and establishing global engineering hubs to support large-scale AI operations effectively.

These key developments have helped companies expand their product offerings, improve their market presence, and capitalize on US Custom Software Development Market growth opportunities. The trend is expected to continue as companies seek a competitive edge.

COMPARATIVE ANALYSIS OF THE RELATED MARKET

US Custom Software Development Market	**Data Center Physical Security Market**	**B2B Cross-border Payments Market**
CAGR 15.2% (Approx)	*CAGR 11.92% (Approx)*	*CAGR 7.2% (Approx)*
USD **54,276.5 Million** by 2033	USD **6,459.7 Million** by 2033	USD **121.84 Trillion** by 2033

US Custom Software Development Market – Significant Threats

The US Custom Software Development Market faces several significant threats that could impact its growth and profitability in the future. Some of these threats include:

- **Rising Costs of Development**: Labour inflation, particularly the new breed of specialized software engineers is sure to slug the profitability of companies developing custom software. The overhead cost of dealing with complex projects or a long development cycle also increases the bill of a custom solution, which in turn limits market demand among the smaller business set.
- **Cybersecurity Risks**: The information on which the custom software solution works may be sensitive, and thus, there is an increased need to have robust cybersecurity measures in place. However, the increasing complexity of cyberattacks makes security vulnerable for the developer and the client, who would risk a data breach, financial losses, and damage to reputation in case measures of protection and compliance are not in place.
- **Regulatory Compliance**: Industry regulation across regions, such as GDPR, HIPAA, and CCPA, is a big challenge in the development process. Non-compliances have cost businesses heavy fines, litigation, and sometimes the rollbacks of products. Developers must thus be abreast of the ever-changing legal frameworks.
- **Technological Obsolete Period**: In a world of rapid evolution of technology, custom software today becomes obsolete overnight unless it is kept updated continuously. Thereby, the newer technologies or technology with outdated frameworks/versions may reduce the relevance and performance of the product, eventually making it disappointing to the clients and losing market opportunities.
- **Market Saturation**: The market is saturated due to increasing players in the custom software development market with long lines of low-cost offshore competition. Intensive competition causes price undercutting, reduced margins, and an increased need for differentiation in value propositions; this could put a strain on smaller firms in trying to keep pace with competitive pressures.

US Custom Software Development Market 2024–2033 (By Deployment Model)

Category-Wise Insights:

By Type

- **Web-Based Solutions:** A web-based solution sits in the cloud and utilizes a web browser as the client interface, providing much flexibility and accessibility across devices. Trends in this area include responsive design for smooth user experiences, deployment of AI to allow for more personalized interactions, and a focus on cloud-native architecture to achieve scalability and cost-effectiveness.
- **Mobile App:** Mobile apps are applications of software whose aim is primarily on mobile devices. It focuses mainly on user engagement and functionality. Trends include the adoption of cross-platform development frameworks towards quick deployment; adoption of the IoT to make connectivity much easier; and focus on user-centered design to make it intuitive.

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- **Enterprise Software:** Enterprise software is applications meant for use in organizations that manage complex business processes and scale-up requirements. Some of the trends adopted include the implementation of ERP systems, CRM systems, AI-driven analytics for data insights, blockchain, enhanced security, and transaction transparency.
- **Others:** It covers specialized software-based solutions, including AI-driven applications, IoT platforms, and emerging technologies such as AR and VR. Trends include solutions for personalized medicine in healthcare, IoT and AI-based smart city projects, advancements in industrial automation software solutions for process improvements in manufacturing, and so on.

By Deployment Model

- **On-premises:** On-premises refers to implementing and running custom software on local servers and infrastructure managed by the organization. Though most businesses are increasingly adopting cloud solutions, various enterprises have found it expedient to have their data on-premises due to security and compliance issues in industries that require regulated and significant results. Trends include hybrid deployment, which refers to the integration of on-premises with cloud solutions for flexibility.
- **Cloud-based:** Cloud-based deployment provides the hosting of custom software on a remote server accessed over the internet. Its benefits include scalability, cost-effectiveness, and accessibility most of modern business's agility. Some of the trends growing in the US custom software development market include Serverless architectures AI-driven cloud services and multi-cloud strategies to ensure resilience and performance.

By Organization Size

- **Small and Medium-sized Enterprises (SMEs):** Small and Medium-sized Enterprises SMEs represent generally firms having less than 500 employees within the US Custom Software Development Market. For most of them, low-cost options that can be modified according to their requirements are preferred, given the optimization of operational efficiency and customer engagement. Trends include greater adoption of cloud-based and SaaS technologies as well as agile development methodologies. There is interest in AI and machine learning-based applications that improve efficiencies in processes and competencies.
- **Large Enterprises:** In terms of sizeable workforce and wide-ranging operations, large enterprises are characterized by their extensive workforce and broad dimensions of operations. In the US Custom Software Development Market, these organizations opt for scalable and robust solutions that blend with the existing infrastructure seamlessly. Investments in enterprise-wide digital transformation initiatives to utilize advanced technologies such as blockchain and IoT, leading to increased productivity and innovation, characterize the market trends. Along with this, large enterprises also follow cybersecurity aspects against sensitive data and relevant issues concerning compliance with industry regulations.

US Custom Software Development Market 2024–2033 (By Organization Size)

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By End User Industry

- **Healthcare:** Healthcare primarily adopts custom software for EHRs, telemedicine platforms, and patient management systems. The trends include AI in diagnostics, remote patient monitoring, and interoperability solutions to enhance care and operational efficiency.
- **BFSI (Banking, Financial Services, and Insurance):** BFSI is an acronym for banking, financial services, and insurance: The BFSI sector mainly depends on custom software for core banking, mobile banking apps, and risk management solutions. Trending is basically about blockchain security for secure transactions, AI-powered chatbots, and regulatory compliance automation for effective operation.
- **Retail:** Custom software for the retail environment includes e-commerce portals, inventory management software, and solutions for relationship management. The trends included are better shopping experiences through personalization, omnichannel integration, and AI-driven analytics about consumer behavior and operational efficiency.
- **Manufacturing:** The custom software developed in manufacturing includes ERP and SCM systems as well as predictive maintenance systems. Among the trends have been these categories: IoT-enabled smart factories, simulation using digital twins, and AI in quality control to optimize production processes but also reduce costs.
- **Government:** Government custom software relates to citizen services portals, tax management systems, and public safety solutions. Among the trends have included scalability through cloud technology, cybersecurity, and AI in data-driven policy-making and service delivery.
- **Others** (Education, Telecom, Transportation): Custom software in other industries addresses specific needs like the learning management system in education, network management in telecoms, and logistics optimization in transportation. AI for customized learning in the education sector, 5G network management tools in the telecom sectors, and IoT-based fleet management solutions to obtain efficiency and customer satisfaction.

Report Scope

Feature of the Report	Details
Market Size in 2024	USD 15,189.4 Million
Projected Market Size in 2033	USD 54,276.5 Million
Market Size in 2023	USD 13,185.2 Million
CAGR Growth Rate	15.2% CAGR
Base Year	2023
Forecast Period	2024-2033
Key Segment	By Type, Deployment Model, Organization Size, End-User Industry and Country
Report Coverage	Revenue Estimation and Forecast, Company Profile, Competitive Landscape, Growth Factors and Recent Trends
Country Scope	US
Buying Options	Request tailored purchasing options to fulfil your research requirements.

Competitive Landscape – US Custom Software Development Market

The US Custom Software Development Market is highly competitive, with many manufacturers and retailers operating in the US. Some of the key players in the market include:

- Accenture
- IBM
- Capgemini
- Cognizant
- Infosys
- Tata Consultancy Services (TCS)
- HCL Technologies
- Wipro
- DXC Technology
- Tech Mahindra
- EPAM Systems

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- LTI (Larsen & Toubro Infotech)
- Atos
- CGI
- Virtusa
- Others

These companies operate in the market through various strategies such as product innovation, mergers and acquisitions, and partnerships.

The competitive landscape of the U.S. custom software development market is dominated mainly by major players such as Accenture, IBM, Cognizant, Capgemini, and Tata Consultancy Services (TCS), and additional competition from firms such as HCL Technologies, Wipro, DXC Technology, and Tech Mahindra.

New entrants include innovation adopters EPAM Systems and Pivotal Software which are agile and focus on developing cloud-native solutions, which are used to facilitate deployment and scale up real-time as the businesses require.

Moreover, these firms are using strategic initiatives, including partnerships and acquisitions, to increase service offerings and integrate newer advanced technologies like AI, IoT, and automation. Although competition in the market is fierce, with both entrenched players and new entrants, the demand for digital transformation and customized solutions in various industries continues unabated, thereby offering substantial growth opportunities.

US Custom Software Development Market 2024–2033 (By Million)

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The **US Custom Software Development Market** is segmented as follows:

By Type

- Web-based Solutions
- Mobile App
- Enterprise Software
- Others

By Deployment Model

- On-premises
- Cloud-based

By Organization Size

- Small and Medium-sized Enterprises (SMEs)
- Large Enterprises

By End-User Industry

- Healthcare
- BFSI (Banking, Financial Services, and Insurance)
- Retail
- Manufacturing
- Government
- Others

FAQS

1 . Which Are The Driving Factors Of The US Custom Software Development Market? +

2 . Which Type Led The US Custom Software Development Market? +

3 . Who Are The Key Players In The US Custom Software Development Market? +

4 . What Is The Growth Rate Of The US Custom Software Development Market? +

5 . How Much Is The US Custom Software Development Market? +

PURCHASE OPTIONS

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U.S. Custom Software Development Market (2024 - 2030)

Size, Share & Trends Analysis Report By Solution, By Deployment (Cloud, On-premise), By Enterprise Size, By End-use, And Segment Forecasts

Report Summary | Table of Contents | Segmentation | Methodology

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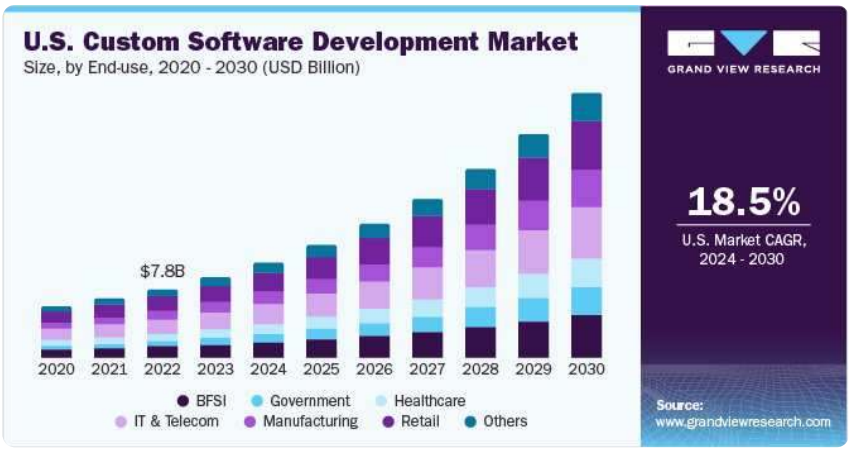
Market Size & Trends

The **U.S. custom software development market size was valued at USD 9.08 billion in 2023** and is projected to grow at a CAGR of 18.5% from 2024 to 2030. The U.S. accounted for 25.6% of the **global custom software development market**. The growth of the U.S. custom software development market can be attributed to addressing specific business needs and providing a competitive advantage by automating and streamlining various processes, improving overall efficiency, reducing errors, and enhancing customer satisfaction. Custom software development allows businesses the flexibility to make changes to their software solutions as per their evolving business needs. As a result, the U.S. market is witnessing the growth of custom software.

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Source: Grand View Research, IR Documents, Primary Interviews, Paid Databases

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The adoption of cloud-based custom software development services is gaining traction against the backdrop of the increasing demand for digital transformation and the need for flexible and scalable solutions. Cloud-based platforms allow businesses to access software and services on demand, which are typically more cost-effective and efficient than traditional on-premises solutions. In addition, the increasing prevalence of remote work and the need for collaboration tools have led to the increased adoption of cloud-based solutions.

In addition, ongoing industry trends such as **Industry 4.0**, smart manufacturing, automation, and robotics drive the demand for sophisticated, high-performance enterprise software. Enterprise software plays a crucial role in integrating different processes, applications, and tasks within an organization. It facilitates efficient monitoring and utilization of organizational resources, automates manual processes, and helps in reducing operational expenses. These factors are expected to drive growth in the U.S. custom software development market over the forecast period.

Furthermore, personalized customer experiences in the retail industry are increasing due to the smart use of mobile devices while shopping on e-commerce platforms, and the need for efficient inventory and **supply chain management** are some of the primary factors driving the demand for custom software development services in retail industries in the United States. Retailers are also exploring innovative technologies, includi

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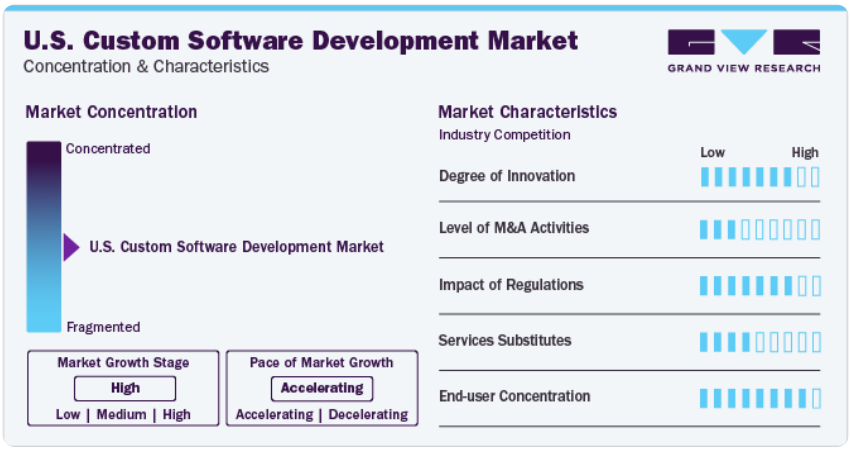
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artificial intelligence, machine learning, and big data analytics, to gain insights into customer behavior and preferences, which is expected to drive the growth of the U.S. custom software development market.

However, the costs associated with developing custom software are high for businesses. Custom software development incurs higher costs than packaged software due to various factors. Some of them include proficient data management and robust security measures. In addition, tailored software is developed for the specific business models and processes while prioritizing the needs of core end users. Additionally, the maintenance and support costs further contribute to the expenses of custom software. Thus, factors such as high cost and technical expertise required in developing custom software could hamper the growth of the custom software development market.

Market Concentration & Characteristics

The market growth stage is moderate, and the pace of the market growth is accelerating. The U.S. Custom Software Development Market is relatively fragmented. In the near future, demand for custom software may increase due to **software** covering a wide range of tools, solutions, and applications designed to enhance automation in business processes, improve efficiency, and facilitate decision-making in areas such as HRM, finance, CRM, retail e-commerce, and supply chain management. As a result, it is likely to generate growth opportunities in the U.S. custom software development market.



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The U.S. custom software development market is characterized by the presence of several privately and publicly held companies across the United States. Trigent Software, Inc., Brainvire Infotech Inc., and other global software development companies are operating in the U.S. market. These companies offer system architecture design, User Interface (UI) & User Experience (UX) design, and custom software development to suit end-use applications and customer requirements.

There is a scope for strategic partnerships and joint ventures in custom software development; in the U.S., companies are aggressively pursuing various initiatives, such as strategic partnerships, mergers & acquisitions, expansion, and new product launches, as part of the efforts to expand their customer base in the United States. For instance, in December 2023, Brainvire Infotech Inc. partnered with CrowdSky Solutions to empower the company with a highly customizable AI-driven platform.

However, U.S. market players must adhere to the standards drafted by various international regulatory bodies while designing, developing, and maintaining the software. Regulations have become important to combat cyber threats and ensure data privacy in custom software. The U.S. market's growth will be determined by the demand for custom software development based on end-user requirements.

Solution Insights

Enterprise software segment dominated the market and accounted for the highest revenue share of 61.1% in 2023. The enterprise software sub-segment is projected to experience significant growth in U.S. The driving factors are streamlined workflows and enhanced communication across various departments; organizations seek centralized systems. Custom enterprise software addresses this need by offering tailored functionalities and seamless integration capabilities, unlike off-the-shelf solutions. As a result, enterprise software component demand in the U.S. custom software development market is growing.

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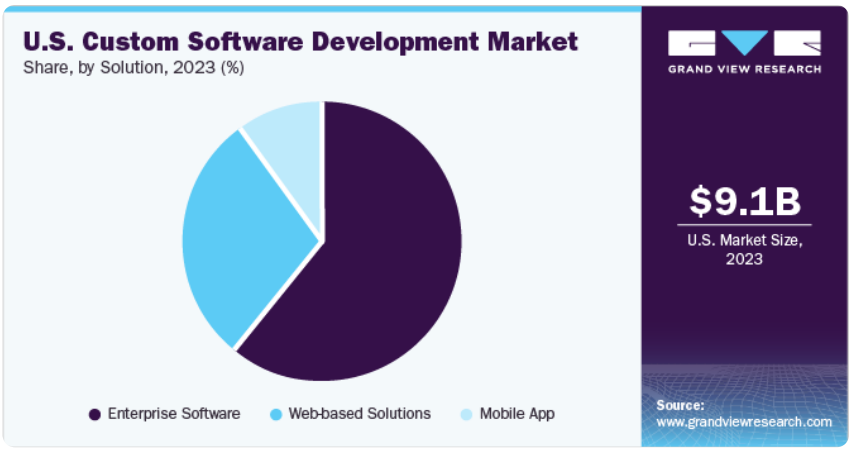
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Web-based solutions segment is anticipated to witness a significant CAGR of 17.1% from 2024 to 2030 in the U.S. custom software development market. Web-based solutions offer seamless accessibility, allowing users to access applications from any device with a stable internet connection and fostering remote work and collaboration practices, which is critical to today's globalized business environment. Web-based solutions also help to reduce extensive hardware and software installation costs. Therefore, the increasing adoption of **cloud computing** technologies is propelling the web-based solution segment to become a dominant force within the U.S. custom software development market.

Deployment Insights

Cloud segment led the market and accounted highest revenue share of 57.5% in 2023. Businesses are increasingly embracing **digital transformation**. As a result, there exists a strong demand for tailored software solutions that can seamlessly integrate with cloud infrastructure, offer scalability and flexibility, and are cost-efficient. Moreover, the proliferation of cloud-native technologies and platforms has empowered developers to leverage advanced tools and frameworks, accelerating the development cycle and driving innovation. As a result, cloud segment has a significant market share in the U.S. custom software development market.

On-premise segment is anticipated to witness a CAGR of 16.9% from 2024 to 2030 in the U.S. custom software development market. On-premise deployments offer physica location and security in a controlled manner, which is benefici

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Supplemental Security Income During and After Incarceration

CRS Product Type: In Focus
CRS Product Number: IF12580
Topics: Retirement Security & Social Insurance; Social Welfare
Publication Date: 01/31/2024
Author: Tatem, Emma K.

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Background

Certain people who are incarcerated are not eligible for Supplemental Security Income (SSI) payments but may be able to receive them once released. There is congressional interest in ensuring that eligible people—including eligible individuals with disabilities and low incomes leaving prison—are able to access SSI payments if they meet program rules while also making sure that SSI payments are made only to those who qualify for them. This In Focus explains how incarceration affects eligibility for SSI and the process for starting or resuming SSI payments following incarceration.

The SSI program—administered by the Social Security Administration (SSA)—provides monthly cash payments to people who (1) have qualifying disabilities or blindness or are age 65 or older; (2) have little or no income and resources; and (3) meet certain other eligibility criteria in federal law. SSI is intended to provide eligible individuals with a guaranteed minimum income for meeting basic needs, such as food and shelter. There are no work or contribution requirements to qualify for SSI payments. However, because the program is based on need (i.e., means-tested), it is restricted to people whose countable income and resources are (and remain) below statutorily prescribed limits.

Can People Receive SSI While Incarcerated?

Although there are some exceptions for certain medical facilities, individuals are generally ineligible for SSI in any calendar month during which they reside for the entire month in public institutions. Public institutions are certain facilities operated or controlled by government entities that typically serve four or more individuals and provide some treatment or services in addition to food and shelter. Public institutions include federal, state, and local jails and prisons, as well as certain facilities operated by private entities acting as agents of federal, state, or local penal authorities, such as private prisons, "halfway houses," and juvenile treatment centers.

Because SSI payments are designed to provide individuals with a minimum income to meet their basic needs for food and shelter, individuals residing in public institutions that provide them with food and shelter have been determined not to require SSI payments under current law. As such, individuals cannot receive SSI payments if they are incarcerated for at least one full calendar month—for example, from May 1 through May 31. Individuals incarcerated for less than one full calendar month are eligible for SSI, provided they meet all other program rules. SSI-eligible individuals incarcerated for more than 30 or 31 continuous days that occur in two different months—for example, from April 29 through May 30—remain eligible for SSI until they have been continuously incarcerated from the first day of a month through the last day of the same month.

Individuals are also generally ineligible for SSI in any month during which they are fleeing to avoid prosecution, custody, or confinement for a felony (or an attempt to commit a felony). Under current policy, SSA does not suspend or deny SSI payments based solely on a probation or parole violation.

What Happens to Recipients' SSI Payments When They Are Incarcerated?

Individuals receiving SSI payments at the time they are incarcerated will have their SSI payments suspended on the first day of the month after the first full calendar month that they are incarcerated. For example, if an SSI recipient is incarcerated on May 1 and is still incarcerated on May 31, the recipient's SSI payments would be suspended on June 1. After 12 consecutive months of SSI payment suspension, SSI recipients are generally terminated from the program and would need to reapply to resume SSI payments after incarceration. Incarcerated SSI recipients who have their payments suspended for fewer than 12 consecutive months can generally have their SSI payments reinstated—on the earliest day of the month in which they are released from incarceration and meet all other eligibility requirements—without having to reapply for SSI. If—after a period of ineligibility that is less than 12 months—individuals regain SSI eligibility partway through a month, their SSI payments are sometimes prorated from the date their eligibility resumes until the end of the month.

SSI recipients are prohibited from receiving any past-due SSI payments (i.e., underpayments) while they are incarcerated. For example, if—before being incarcerated for more than a full calendar month—a former SSI recipient received a lower monthly SSI payment than was owed in any month, the individual cannot be repaid the underpaid benefits until being released from incarceration.

How Does SSA Know When an SSI Recipient Is Incarcerated?

Because SSI is a means-tested program, individuals' SSI eligibility is periodically redetermined—and their monthly payments may be adjusted—based on changes in their income, resources, living arrangements, and certain other factors. SSI recipients are responsible for reporting to SSA any changes in their circumstances that might affect their eligibility for SSI or their monthly payment amounts, including admission to public institutions.

Under current law, SSA also makes payments to certain state or local correctional institutions that provide SSA with timely information about incarcerated SSI recipients that results in their

benefit suspension. SSA pays each eligible institution a one-time payment of up to $400 per SSI recipient suspended based on information provided by the institution within a specified number of days after the SSI recipient's confinement.

Can People Apply for SSI Before Being Released from Incarceration?

Section 1631(m) of the Social Security Act directs the commissioner of Social Security to develop a system under which people can apply for SSI before they are released from public institutions. Per its policy, SSA can process an SSI application under its prerelease procedure if an individual who is incarcerated appears likely to meet the criteria for SSI eligibility upon release and is scheduled to be released within a certain period of time after filing an application. While individuals can generally apply for SSI before their release from incarceration, SSI payments cannot begin until after individuals are released.

SSA has prerelease agreements with some public and private prisons (including a national agreement with Federal Bureau of Prisons [BOP] institutions) to facilitate processing SSI prerelease applications and reinstatements so payments can begin as soon as possible after individuals are released from incarceration. Prerelease agreements are optional and nonbinding and can be written or verbal. If there is a prerelease agreement, a representative of the institution (or the individual) can contact SSA before the individual's scheduled release date. Among other responsibilities, an institution participating in a prerelease agreement might also notify SSA when an individual is released. For information about facilities that have prerelease agreements with SSA, see *Transitioning from Incarceration: Statewide Prerelease Agreements*.

Individuals who are incarcerated can submit SSI applications to SSA under the prerelease procedure regardless of whether their confining institutions have prerelease agreements with SSA. If there is no prerelease agreement, individuals must contact SSA to provide their anticipated release dates. Individuals must also notify SSA when they are released and provide official prison release documents.

According to SSA's policies, the time frame for beginning to process SSI prerelease claims under the prerelease procedure varies by type of penal institution (i.e., BOP or non-BOP) and SSI claim (i.e., disability, blindness, or age 65 or older; see **Table 1**). SSA may begin processing an SSI disability or blindness prerelease claim received from a BOP institution 120 days before the applicant's anticipated release. SSA may begin processing an SSI disability or blindness prerelease claim received from a non-BOP institution when the applicant's expected release date is within 30 days of the estimated time for getting a disability determination (made by state agencies). For example, if it takes 90 days, on average, for the state agency to make a disability determination, SSA may begin processing a prerelease claim 120 days before the applicant's anticipated release date from a non-BOP institution. SSA may begin processing an SSI age 65 or older prerelease claim 30 days before an applicant's expected release date regardless of whether the applicant is confined to a BOP or non-BOP institution.

Table 1. Time Frame of When SSA Can Begin Processing an SSI Prerelease Claim

SSI Claim Type	BOP Institutions	Non-BOP Institutions

Disability or blindness claim	120 days before expected release date	When expected release date is within 30 days of disability determination average processing time
Age 65 or older claim	30 days before expected release date	30 days before expected release date

What Happens If an Individual Is Found Not Guilty?

Ineligibility for SSI payments because of incarceration is related to an individual's residence in a public institution that supplies food and shelter; it does not necessarily depend on the individual's conviction. Thus, individuals who are found not guilty but have been held in correctional institutions for longer than one full calendar month—for example, those confined while awaiting trial and not convicted—are not eligible to receive SSI payments until they are released and meet all other eligibility criteria. Alternatively, individuals found guilty but confined for less than one full calendar month or sentenced to home confinement for at least one full calendar month generally remain eligible for SSI payments, assuming they meet all other program rules.

Additional Resources

SSA provides resources on its website about SSI payments after incarceration. See *Benefits After Incarceration: What You Need to Know*. This webpage provides links to SSA publications, answers to frequently asked questions, and links to other (non-SSA) websites that provide a range of other resources.

For additional information on the SSI program, see CRS In Focus IF10482, *Supplemental Security Income (SSI)*. Also see CRS Report R44948, *Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI): Eligibility, Benefits, and Financing*.

This In Focus does not address how incarceration affects Old-Age, Survivors, and Disability Insurance—commonly referred to as Social Security—benefits. For information on Social Security benefits during and after incarceration, see CRS In Focus IF12138, *Social Security: Are Benefits Paid to Incarcerated Individuals?*

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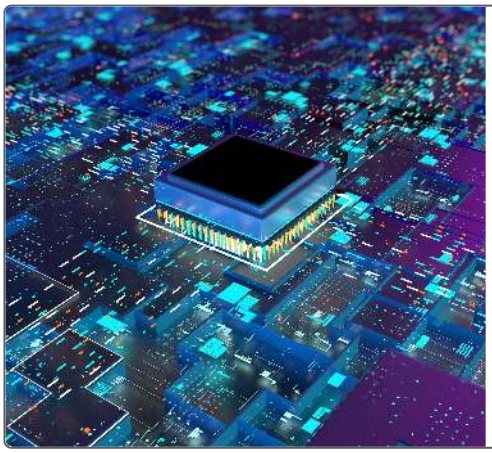
Roles and Responsibilities Framework for Artificial Intelligence in Critical Infrastructure

On November 14, 2024 DHS released the *"Roles and Responsibilities Framework for Artificial Intelligence in Critical Infrastructure" ("Framework")*. This first-of-its kind collaboration with industry and civil society recommends new guidance to advance the responsible use of AI in America's critical infrastructure.

The recommendations were developed by and for entities at each layer of the AI supply chain: cloud and computer providers, AI developers, and critical infrastructure owners and operators – as well as the civil society and public sector entities that protect and advocate for consumers.

This product is the culmination of considerable dialogue and debate among the Artificial Intelligence Safety and Security Board (the Board), a public-private advisory committee established by DHS, who identified the need for clear guidance on how each layer of the AI supply chain can do their part to ensure that AI is deployed safely and securely in U.S. critical infrastructure. The report complements other work carried out by the Administration on AI safety, such as the guidance from the AI Safety Institute, on managing a wide range of misuse and accident risks.

Read the press release on the Framework (/news/2024/11/14/groundbreaking-framework-safe-and-secure-deployment-ai-critical-infrastructure).



DHS plays a critical role in ensuring artificial intelligence (AI) safety and security nationwide. The Department uses AI responsibly to advance its homeland security mission while protecting the privacy and individual rights of the American public.

Learn More About AI at DHS (/ai)

Attachment	Ext.	Size	Date
Roles and Responsibilities Framework for Artificial Intelligence in Critical Infrastructure (https://www.dhs.gov/sites/default/files/2024-11/24_1114_dhs_ai-roles-and-responsibilities-framework-508.pdf)	PDF	3.78 MB	11/14/2024

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Last Updated: 01/23/2025














Deploying AI Systems Securely

Best Practices for Deploying Secure and Resilient AI Systems

Executive summary

Deploying artificial intelligence (AI) systems securely requires careful setup and configuration that depends on the complexity of the AI system, the resources required (e.g., funding, technical expertise), and the infrastructure used (i.e., on premises, cloud, or hybrid). This report expands upon the 'secure deployment' and 'secure operation and maintenance' sections of the Guidelines for secure AI system development and incorporates mitigation considerations from Engaging with Artificial Intelligence (AI). It is for organizations deploying and operating AI systems designed and developed by another entity. The best practices may not be applicable to all environments, so the mitigations should be adapted to specific use cases and threat profiles. [1], [2]

AI security is a rapidly evolving area of research. As agencies, industry, and academia discover potential weaknesses in AI technology and techniques to exploit them, organizations will need to update their AI systems to address the changing risks, in addition to applying traditional IT best practices to AI systems.

This report was authored by the U.S. National Security Agency's Artificial Intelligence Security Center (AISC), the Cybersecurity and Infrastructure Security Agency (CISA), the Federal Bureau of Investigation (FBI), the Australian Signals Directorate's Australian Cyber Security Centre (ACSC), the Canadian Centre for Cyber Security (CCCS), the New Zealand National Cyber Security Centre (NCSC-NZ), and the United Kingdom's National Cyber Security Centre (NCSC-UK). The goals of the AISC and the report are to:

1. Improve the confidentiality, integrity, and availability of AI systems;
2. Assure that known cybersecurity vulnerabilities in AI systems are appropriately mitigated; and
3. Provide methodologies and controls to protect, detect, and respond to malicious activity against AI systems and related data and services.

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Scope and audience

The term AI systems throughout this report refers to machine learning (ML) based artificial intelligence (AI) systems.

These best practices are most applicable to organizations deploying and operating externally developed AI systems on premises or in private cloud environments, especially those in high-threat, high-value environments. They are not applicable for organizations who are not deploying AI systems themselves and instead are leveraging AI systems deployed by others.

Not all of the guidelines will be directly applicable to all organizations or environments. The level of sophistication and the methods of attack will vary depending on the adversary targeting the AI system, so organizations should consider the guidance alongside their use cases and threat profile.

See Guidelines for secure AI system development for design and development aspects of AI systems. [1]

Introduction

The rapid adoption, deployment, and use of AI capabilities can make them highly valuable targets for malicious cyber actors. Actors, who have historically used data theft of sensitive information and intellectual property to advance their interests, may seek to co-opt deployed AI systems and apply them to malicious ends.

Malicious actors targeting AI systems may use attack vectors unique to AI systems, as well as standard techniques used against traditional IT. Due to the large variety of attack vectors, defenses need to be diverse and comprehensive. Advanced malicious actors often combine multiple vectors to execute operations that are more complex. Such combinations can more effectively penetrate layered defenses.

Organizations should consider the following best practices to secure the deployment environment, continuously protect the AI system, and securely operate and maintain the AI system.

The best practices below align with the cross-sector Cybersecurity Performance Goals (CPGs) developed by CISA and the National Institute of Standards and Technology (NIST). The CPGs provide a minimum set of practices and protections that CISA and NIST recommend all organizations implement. CISA and NIST based the CPGs on

existing cybersecurity frameworks and guidance to protect against the most common and impactful threats, tactics, techniques, and procedures. Visit CISA's Cross-Sector Cybersecurity Performance Goals for more information on the CPGs, including additional recommended baseline protections.

Secure the deployment environment

Organizations typically deploy AI systems within existing IT infrastructure. Before deployment, they should ensure that the IT environment applies sound security principles, such as robust governance, a well-designed architecture, and secure configurations. For example, ensure that the person responsible and accountable for AI system cybersecurity is the same person responsible and accountable for the organization's cybersecurity in general [CPG 1.B].

The security best practices and requirements for IT environments apply to AI systems, too. The following best practices are particularly important to apply to the AI systems and the IT environments the organization deploys them in.

Manage deployment environment governance

- If an organization outside of IT is deploying or operating the AI system, work with the IT service department to identify the deployment environment and confirm it meets the organization's IT standards.
    - Understand the organization's risk level and ensure that the AI system and its use is within the organization's risk tolerance overall and within the risk tolerance for the specific IT environment hosting the AI system. Assess and document applicable threats, potential impacts, and risk acceptance. [3], [4]
    - Identify the roles and responsibilities for each stakeholder along with how they are accountable for fulfilling them; identifying these stakeholders is especially important should the organization manage their IT environment separately from their AI system.
    - Identify the IT environment's security boundaries and how the AI system fits within them.
- Require the primary developer of the AI system to provide a threat model for their system.

    - The AI system deployment team should leverage the threat model as a guide to implement security best practices, assess potential threats, and plan mitigations. [5], [6]

- Consider deployment environment security requirements when developing contracts for AI system products or services.
- Promote a collaborative culture for all parties involved, including the data science, infrastructure, and cybersecurity teams in particular, to allow for teams to voice any risks or concerns and for the organization to address them appropriately.

Ensure a robust deployment environment architecture

- Establish security protections for the boundaries between the IT environment and the AI system [CPG 2.F].
- Identify and address blind spots in boundary protections and other security-relevant areas in the AI system the threat model identifies. For example, ensure the use of an access control system for the AI model weights and limit access to a set of privileged users with two-person control (TPC) and two-person integrity (TPI) [CPG 2.E].
- Identify and protect all proprietary data sources the organization will use in AI model training or fine-tuning. Examine the list of data sources, when available, for models trained by others. Maintaining a catalog of trusted and valid data sources will help protect against potential data poisoning or backdoor attacks. For data acquired from third parties, consider contractual or service level agreement (SLA) stipulations as recommended by CPG 1.G and CPG 1.H.
- Apply secure by design principles and Zero Trust (ZT) frameworks to the architecture to manage risks to and from the AI system. [7], [8], [9]

Harden deployment environment configurations

- Apply existing security best practices to the deployment environment. This includes sandboxing the environment running ML models within hardened containers or virtual machines (VMs) [CPG 2.E], monitoring the network [CPG 2.T], configuring firewalls with allow lists [CPG 2.F], and other best practices, such as those in NSA's Top Ten Cloud Mitigation Strategies for cloud deployments.
- Review hardware vendor guidance and notifications (e.g., for GPUs, CPUs, memory) and apply software patches and updates to minimize the risk of exploitation of vulnerabilities, preferably via the Common Security Advisory Framework (CSAF). [10]

- Secure sensitive AI information (e.g., AI model weights, outputs, and logs) by encrypting the data at rest, and store encryption keys in a hardware security module (HSM) for later on-demand decryption [CPG 2.L].
- Implement strong authentication mechanisms, access controls, and secure communication protocols, such as by using the latest version of Transport Layer Security (TLS) to encrypt data in transit [CPG 2.K].
- Ensure the use of phishing-resistant multifactor authentication (MFA) for access to information and services. [2] Monitor for and respond to fraudulent authentication attempts [CPG 2.H]. [11]
- Understand and mitigate how malicious actors exploit weak security controls by following the mitigations in Weak Security Controls and Practices Routinely Exploited for Initial Access.

Protect deployment networks from threats

Adopt a ZT mindset, which assumes a breach is inevitable or has already occurred. Implement detection and response capabilities, enabling quick identification and containment of compromises. [8], [9]

- Use well-tested, high-performing cybersecurity solutions to identify attempts to gain unauthorized access efficiently and enhance the speed and accuracy of incident assessments [CPG 2.G].
- Integrate an incident detection system to help prioritize incidents [CPG 3.A]. Also integrate a means to immediately block access by users suspected of being malicious or to disconnect all inbound connections to the AI models and systems in case of a major incident when a quick response is warranted.

Continuously protect the AI system

Models are software, and, like all other software, may have vulnerabilities, other weaknesses, or malicious code or properties.

Validate the AI system before and during use

- Use cryptographic methods, digital signatures, and checksums to confirm each artifact's origin and integrity (e.g., encrypt safetensors to protect their integrity and confidentiality), protecting sensitive information from unauthorized access during AI processes. [14]

- Create hashes and encrypted copies of each release of the AI model and system for archival in a tamper-proof location, storing the hash values and/or encryption keys inside a secure vault or HSM to prevent access to both the encryption keys and the encrypted data and model at the same location. [1]
- Store all forms of code (e.g., source code, executable code, infrastructure as code) and artifacts (e.g., models, parameters, configurations, data, tests) in a version control system with proper access controls to ensure only validated code is used and any changes are tracked. [1]
- Thoroughly test the AI model for robustness, accuracy, and potential vulnerabilities after modification. Apply techniques, such as adversarial testing, to evaluate the model's resilience against compromise attempts. [4]
- Prepare for automated rollbacks and use advanced deployments with a human-in-the-loop as a failsafe to boost reliability, efficiency, and enable continuous delivery for AI systems. In the context of an AI system, rollback capabilities ensure that if a new model or update introduces problems or if the AI system is compromised, the organization can quickly revert to the last known good state to minimize the impact on users.
- Evaluate and secure the supply chain for any external AI models and data, making sure they adhere to organizational standards and risk management policies, and preferring ones developed according to secure by design principles. Make sure that the risks are understood and accepted for parts of the supply chain that cannot adhere to organizational standards and policies. [1], [7]
- Do not run models right away in the enterprise environment. Carefully inspect models, especially imported pre-trained models, inside a secure development zone prior to considering them for tuning, training, and deployment. Use organization-approved AI-specific scanners, if and when available, for the detection of potential malicious code to assure model validity before deployment.
- Consider automating detection, analysis, and response capabilities, making IT and security teams more efficient by giving them insights that enable quick and targeted reactions to potential cyber incidents. Perform continuous scans of AI models and their hosting IT environments to identify possible tampering.
    - When considering whether to use other AI capabilities to make automation more efficient, carefully weigh the risks and benefits, and ensure there is a human-in-the-loop where needed.

Secure exposed APIs

- If the AI system exposes application programming interfaces (APIs), secure them by implementing authentication and authorization mechanisms for API access. Use secure protocols, such as HTTPS with encryption and authentication [CPG 2.C, 2.D, 2.G, 2.H]. [1]
- Implement validation and sanitization protocols for all input data to reduce the risk of undesired, suspicious, incompatible, or malicious input being passed to the AI system (e.g., prompt injection attacks). [1]

Actively monitor model behavior

- Collect logs to cover inputs, outputs, intermediate states, and errors; automate alerts and triggers [CPG 2.T].
- Monitor the model's architecture and configuration settings for any unauthorized changes or unexpected modifications that might compromise the model's performance or security. [1]
- Monitor for attempts to access or elicit data from the AI model or aggregate inference responses. [1]

Protect model weights

- Harden interfaces for accessing model weights to increase the effort it would take for an adversary to exfiltrate the weights. For example, ensure APIs return only the minimal data required for the task to inhibit model inversion.
- Implement hardware protections for model weight storage as feasible. For example, disable hardware communication capabilities that are not needed and protect against emanation or side channel techniques.
- Aggressively isolate weight storage. For example, store model weights in a protected storage vault, in a highly restricted zone (HRZ) (i.e., a separate dedicated enclave), or using an HSM [CPG 2.L]. [12]

Secure AI operation and maintenance

Follow organization-approved IT processes and procedures to deploy the AI system in an approved manner, ensuring the following controls are implemented.

Enforce strict access controls

- Prevent unauthorized access or tampering with the AI model. Apply role-based access controls (RBAC), or preferably attribute-based access controls (ABAC) where feasible, to limit access to authorized personnel only.
    - Distinguish between users and administrators. Require MFA and privileged access workstations (PAWs) for administrative access [CPG 2.H].

Ensure user awareness and training

Educate users, administrators, and developers about security best practices, such as strong password management, phishing prevention, and secure data handling. Promote a security-aware culture to minimize the risk of human error. If possible, use a credential management system to limit, manage, and monitor credential use to minimize risks further [CPG 2.I].

Conduct audits and penetration testing

- Engage external security experts to conduct audits and penetration testing on ready-to-deploy AI systems. This helps identify vulnerabilities and weaknesses that may have been overlooked internally. [13], [15]

Implement robust logging and monitoring

- Monitor the system's behavior, inputs, and outputs with robust monitoring and logging mechanisms to detect any abnormal behavior or potential security incidents [CPG 3.A]. [16] Watch for data drift or high frequency or repetitive inputs (as these could be signs of model compromise or automated compromise attempts). [17]
- Establish alert systems to notify administrators of potential oracle-style adversarial compromise attempts, security breaches, or anomalies. Timely detection and response to cyber incidents are critical in safeguarding AI systems. [18]

Update and patch regularly

- When updating the model to a new/different version, run a full evaluation to ensure that accuracy, performance, and security tests are within acceptable limits before redeploying.

Prepare for high availability (HA) and disaster recovery (DR)

- Use an immutable backup storage system, depending on the requirements of the system, to ensure that every object, especially log data, is immutable and cannot be changed [CPG 2.R]. [2]

Plan secure delete capabilities

- Perform autonomous and irretrievable deletion of components, such as training and validation models or cryptographic keys, without any retention or remnants at the completion of any process where data and models are exposed or accessible. [19]

Conclusion

The authoring agencies advise organizations deploying AI systems to implement robust security measures capable of both preventing theft of sensitive data and mitigating misuse of AI systems. For example, model weights, the learnable parameters of a deep neural network, are a particularly critical component to protect. They uniquely represent the result of many costly and challenging prerequisites for training advanced AI models, including significant compute resources; collected, processed, and potentially sensitive training data; and algorithmic optimizations.

AI systems are software systems. As such, deploying organizations should prefer systems that are secure by design, where the designer and developer of the AI system takes an active interest in the positive security outcomes for the system once in operation. [7]

Although comprehensive implementation of security measures for all relevant attack vectors is necessary to avoid significant security gaps, and best practices will change as the AI field and techniques evolve, the following summarizes some particularly important measures:

- Conduct ongoing compromise assessments on all devices where privileged access is used or critical services are performed.
- Harden and update the IT deployment environment.
- Review the source of AI models and supply chain security.
- Validate the AI system before deployment.
- Enforce strict access controls and API security for the AI system, employing the concepts of least privilege and defense-in-depth.

- Use robust logging, monitoring, and user and entity behavior analytics (UEBA) to identify insider threats and other malicious activities.
- Limit and protect access to the model weights, as they are the essence of the AI system.
- Maintain awareness of current and emerging threats, especially in the rapidly evolving AI field, and ensure the organization's AI systems are hardened to avoid security gaps and vulnerabilities.

In the end, securing an AI system involves an ongoing process of identifying risks, implementing appropriate mitigations, and monitoring for issues. By taking the steps outlined in this report to secure the deployment and operation of AI systems, an organization can significantly reduce the risks involved. These steps help protect the organization's intellectual property, models, and data from theft or misuse. Implementing good security practices from the start will set the organization on the right path for deploying AI systems successfully.

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Purpose

This document was developed in furtherance of the authoring organizations' cybersecurity missions, including their responsibilities to identify and disseminate threats, and to develop and issue cybersecurity specifications and mitigations. This information may be shared broadly to reach all appropriate stakeholders.

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White House Unveils America's AI Action Plan

The White House

July 23, 2025

The White House today released "Winning the AI Race: America's AI Action Plan", in accordance with President Trump's January executive order on Removing Barriers to American Leadership in AI. Winning the AI race will usher in a new golden age of human flourishing, economic competitiveness, and national security for the American people.

The Plan identifies over 90 Federal policy actions across three pillars – Accelerating Innovation, Building American AI Infrastructure, and Leading in International Diplomacy and Security – that the Trump Administration will take in the coming weeks and months.

Key policies in the AI Action Plan include:

- **Exporting American AI:** The Commerce and State Departments will partner with industry to deliver secure, full-stack AI export packages – including hardware, models, software, applications, and standards – to America's friends and allies around the world.
- **Promoting Rapid Buildout of Data Centers:** Expediting and modernizing permits for data centers and semiconductor fabs, as well as creating new national initiatives to increase high-demand occupations like electricians and HVAC technicians.
- **Enabling Innovation and Adoption:** Removing onerous Federal regulations that hinder AI development and deployment, and seek private sector input on rules to remove.
- **Upholding Free Speech in Frontier Models:** Updating Federal procurement guidelines to ensure that the government only contracts with frontier large language model developers who ensure that their systems are objective and free from top-down ideological bias.

"America's AI Action Plan charts a decisive course to cement U.S. dominance in artificial intelligence. Preside
powering a new age
plan galvanizes Fede
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era. We are moving v
Science and Technology Policy Director Michael Kratsios.

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“Artificial intelligence is a revolutionary technology with the potential to transform the global economy and alter the balance of power in the world. To remain the leading economic and military power, the United States must win the AI race. Recognizing this, President Trump directed us to produce this Action Plan. To win the AI race, the U.S. must lead in innovation, infrastructure, and global partnerships. At the same time, we must center American workers and avoid Orwellian uses of AI. This Action Plan provides a roadmap for doing that,” **said AI and Crypto Czar David Sacks.**

“Winning the AI Race is non-negotiable. America must continue to be the dominant force in artificial intelligence to promote prosperity and protect our economic and national security. President Trump recognized this at the beginning of his administration and took decisive action by commissioning this AI Action Plan. These clear-cut policy goals set expectations for the Federal Government to ensure America sets the technological gold standard worldwide, and that the world continues to run on American technology,” **said Secretary of State and Acting National Security Advisor Marco Rubio.**

Learn more at AI.Gov.

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PRESIDENTIAL ACTIONS

REMOVING BARRIERS TO AMERICAN LEADERSHIP IN ARTIFICIAL INTELLIGENCE

The White House

January 23, 2025

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Purpose. The United States has long been at the forefront of artificial intelligence (AI) innovation, driven by the strength of our free markets, world-class research institutions, and entrepreneurial spirit. To maintain this leadership, we must develop AI systems that are free from ideological bias or engineered social agendas. With the right Government policies, we can solidify our position as the global leader in AI and secure a brighter future for all Americans. This order revokes certain existing AI policies and directives that act as barriers to American AI innovation, clearing a path for the United States to act decisively to retain global leadership in artificial intelligence.

Sec. 2. Policy. It is the policy of the United States to sustain and enhance America's global AI dominance in order to promote human flourishing, economic competitiveness, and national security.

Sec. 3. Definition. Fo
set forth in 15 U.S.C.

Sec. 4. Developing a
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(b) Within 90 days of this order, the OMB Director, in coordination with the APST, shall revise OMB Memoranda M-24-10 and M-24-18 as necessary to make them consistent with the policy set forth in section 2 of this order.

Sec. 6. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:
(i) the authority granted by law to an executive department or agency, or the head thereof; or
(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.
(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.
(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.
THE WHITE HOUSE
January 23, 2025.

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Economic Policy Institute 40 YEARS
THE WORKING PEOPLE'S THINK TANK

Updated employment multipliers for the U.S. economy

Report • By Josh Bivens • January 23, 2019

Summary

When it comes to the ripple effects that spread to the rest of the labor market, one lost dollar of economic output or one lost job is not the same as another.

Each industry has *backward linkages* to economic sectors that provide the materials needed for the industry's output, and each industry has *forward linkages* to the economic sectors where the industry's workers spend their income. Therefore, in addition to the jobs directly supported by an industry, a large number of indirect jobs may also be supported by that industry. The subtraction (or addition) of jobs and output in industries with strong backward and forward linkages to other economic sectors can cause large ripple effects.

This brief calculates *employment multipliers* by industry to illustrate the importance of these linkages, updating earlier work by Bivens (2003) and Baker and Lee (1993). Employment multipliers measure how the creation or destruction of output or employment in a particular industry translates into wider employment changes throughout the economy.

Background and findings

Production in a given economic sector involves *linkages* with other sectors—that is, production in one industry depends on suppliers in other industries (*backward linkages*), while wages earned in the production and supplier sectors are spent in other economic sectors (*forward linkages*). In the case of automobile production, there are backward linkages to industries that produce tires, glass for windshields, and steel for automobile frames (among many others). Forward linkages occur when automobile workers (and suppliers' employees) spend their income in restaurants and retail stores and at the doctor (to name just a few).

Industries that are heavy users of materials are vital to their suppliers. If an automobile factory were to close, its suppliers in the glass, steel, and rubber industries would have a big hole to fill in demand for their own output. Industries that pay higher wages are vital to their forward-linked industries. If a steel factory closed, surrounding restaurants and retail malls would also have a big hole to fill in demand for their output.

There are two obvious ways to measure how intensive an industry's backward and forward linkages are to the rest of the economy. The first estimates the ripple effects of a given *number of jobs* being lost directly in an industry. In this case, the *direct* job loss is assumed to be, say, 100, and then the resulting backward and forward ripple effects can be estimated. The second takes a given *dollar value* of final demand for an industry's output and calculates how much of this final demand spills over into backward- and forward-linked industries. An example would be assessing the impact of a fall of $1 million in final demand for autos (that is, $1 million less being spent on cars by consumers). This fall in final demand would cost jobs directly in the auto production industry, but would also cause demand to fall in supplier industries and in forward-linked industries that rely on automobile workers (and on workers in the supplier industries) to purchase their output. With the right data, researchers can empirically estimate the number of jobs lost in each link of these chains.

There are virtues and drawbacks to both the output and the employment measures as the bases of employment multipliers (as discussed in the methodology appendix); this paper presents estimates using both measures.

Examples: Employment multipliers by jobs lost or by output lost

Would the closing of a factory that manufactures durable goods and employs 1,000 people have a greater impact on the overall economy than the closing of a retail shopping mall that employs 1,000 people? The direct impacts (1,000 jobs lost) are the same; employment multipliers can show us what the total indirect effects will be. As seen in **Table 1**, the number of indirect jobs lost for every 100 direct jobs lost are 744.1 for durable manufacturing and 122.1 for retail trade. Therefore, the estimated total number of indirect jobs lost if the auto factory closed would be 7,441; the estimated indirect job loss if the shopping mall closed would be 1,221.

We use a similar example to look at the question from a different angle: What are the effects on jobs when the demand for output drops by a certain amount? Specifically, would the disappearance of $1 million in final demand for output from factories producing durable goods have the same aggregate jobs impact as the disappearance of $1 million in retail? In this case, the direct jobs lost in durable manufacturing stemming from a $1 million reduction in final demand would be smaller—about two jobs in durable goods manufacturing compared with about 10 jobs in retail. (See **Table 2**, "durable manufacturing" and "retail trade" rows.) This is because durable goods production is far more productive than retail and hence fewer direct jobs are needed per dollar of output. However, the backward and forward linkages for durable goods cause this direct output loss to ripple far more widely throughout the job market. The employment multipliers in Table 1 show a total of 16.5 indirect jobs lost per $1 million drop in demand for durable manufacturing, compared with 10.6 indirect jobs lost for the same demand drop in retail.

This means that, while direct job loss is much lower in durable manufacturing, total job loss (including both indirect and direct jobs) for a $1 million drop in demand is similar in durable manufacturing and retail (18.3 and 20.5, respectively).

The summary findings for major industry groups are provided in Tables 1 and 2. The appendix describes our methodology in detail, and **Appendix Tables A1** and **A2** provide the employment multipliers for all 179 industries tracked by the data sources we use in this paper. Finally, an accompanying **spreadsheet** providing the raw data is being released with this paper for those interested in exploring the multipliers.[2]

TABLE 1

Employment multipliers per 100 direct jobs, by major private-sector industry group

Major industry group	Direct jobs	Supplier jobs*	Induced jobs**	Total indirect jobs
Agriculture, forest, fishing, and hunting	100	93.6	134.8	228.5
Mining	100	224.0	166.0	390.0
Utilities	100	515.4	442.2	957.7
Construction	100	88.0	138.1	226.1
Durable manufacturing	100	289.1	454.9	744.1
Nondurable manufacturing	100	184.8	329.5	514.3
Wholesale trade	100	107.3	128.0	235.3
Retail trade	100	46.7	75.4	122.1
Transportation and warehousing	100	112.8	163.3	276.0
Information	100	252.0	321.1	573.1
Finance and insurance	100	149.7	214.7	364.4
Real estate and rental leasing	100	396.6	483.1	879.7
Professional, scientific, and technical services	100	142.1	276.2	418.3
Management of companies	100	144.4	255.4	399.9
Administrative and support services and waste management	100	45.5	89.1	134.5
Educational services	100	63.8	129.9	193.7
Health care and social assistance	100	69.4	136.2	205.6
Arts, entertainment, and recreation	100	123.3	255.2	378.5
Accommodation and food services	100	53.8	107.4	161.2
Other services (except public administration)	100	70.7	139.6	210.3

Economic Policy Institute 40

* Includes materials and capital services supplier jobs

** Includes jobs supported by respending of income from direct jobs and supplier jobs, as well as public-sector jobs supported by tax revenue

Notes: See methods appendix for derivation. The industry-specific multipliers from Appendix Table A1 are weighted and summed across industries within major industry groups to get the multipliers in this table. For the per-100-jobs multipliers, the weight used is hours of work (weights are included in the Bureau of Labor Statistics Employment Requirements Matrices data).

Source: EPI analysis of data from the Bureau of Labor Statistics (BLS) Employment Requirements Matrices, the BLS Current Employment Statistics program, and the Bureau of Economic Analysis GDP-by-industry accounts

TABLE 2

Employment multipliers per $1 million in final demand, by major private-sector industry group

Major industry group	Direct jobs	Supplier jobs*	Induced jobs**	Total indirect jobs
Agriculture, forest, fishing, and hunting	5.9	5.4	4.8	10.1
Mining	1.3	3.4	2.5	5.9
Utilities	1.0	4.5	5.9	10.4
Construction	5.5	4.8	6.1	10.9
Durable manufacturing	1.8	4.9	11.6	16.5
Nondurable manufacturing	2.6	4.3	10.4	14.7
Wholesale trade	3.8	4.1	4.3	8.4
Retail trade	9.9	4.6	6.1	10.6
Transportation and warehousing	4.7	5.4	6.0	11.3
Information	2.0	4.5	6.4	10.9
Finance and insurance	3.1	4.7	6.2	10.8
Real estate and rental leasing	1.4	5.4	17.2	22.6
Professional, scientific, and technical services	4.3	4.8	10.4	15.3
Management of companies	3.6	5.2	7.2	12.4
Administrative and support services and waste management	10.6	5.0	8.1	13.1
Educational services	9.1	5.4	9.2	14.6
Health care and social assistance	7.8	5.3	8.2	13.5
Arts, entertainment, and recreation	6.5	6.5	16.0	22.5
Accommodation and food services	11.5	6.3	7.0	13.2
Other services (except public administration)	8.7	5.3	8.7	14.0

Economic Policy Institute 40

* Includes materials and capital services supplier jobs

** Includes jobs supported by respending of income from direct jobs and supplier jobs, as well as public-sector jobs supported by tax revenue

Notes: See methods appendix for derivation. The industry-specific multipliers from Appendix Table A2 are weighted and summed across industries within major industry groups to get the multipliers in this table. For the per-$1-million multipliers, the weight used is an output weight (weights are included in the Bureau of Labor Statistics Employment Requirements Matrices data).

Source: EPI analysis of data from the Bureau of Labor Statistics (BLS) Employment Requirements Matrices, the BLS Current Employment Statistics program, and the Bureau of Economic Analysis GDP-by-industry accounts

Conclusion

An understanding of employment multipliers—the degree of backward and forward linkages that exists between industries—may often be useful to policymakers and analysts. As an example, the three largest U.S. automobile firms (General Motors, Ford, and Chrysler) directly employ substantially less than 200,000 workers in the United States. Yet it was widely (and correctly) considered imperative among policymakers to not let these firms fail and become casualties of the financial crisis of late 2008. This belief from policymakers was driven by the fully rational fear that the substantial backward and forward linkages from auto assembly jobs would be large enough to cause mammoth ripple effects throughout the economy. Without understanding the scope of these effects, this decision would be harder to understand.

This report makes these linkages concrete and measurable by calculating employment multipliers two ways and provides estimates for 179 private-sector industries. It also provides a methodology and accompanying **spreadsheet** to allow others to experiment with calculations.

Acknowledgments

This research was made possible by support from the **Alliance for American Manufacturing**.

Appendix: Data methods for calculating employment multipliers, per dollar and per job

In this report, I estimate two broad categories of indirect job impacts that are spurred by direct employment changes in a given industry: supplier jobs and induced (or respending) jobs (including public-sector jobs). The first category (supplier jobs) defines the backward linkages of an industry. Induced jobs define forward linkages. The total of these influences make up the "employment multiplier."

I calculate the employment multipliers on two different bases: per each 100 jobs in an industry and per each $1 million of final demand for an industry's output.

Supplier jobs

Supplier jobs are generally the most intuitive category of indirect employment changes. Put simply, when jobs are lost in one industry, the industries that provide inputs and materials also suffer losses. Take a concrete example: When coal-mining activity shrinks, it leads to a reduction in demand for industries that provide inputs to coal mining, such as those that provide safety equipment, industrial equipment, and/or transportation equipment and services.

Supplier job estimates can be calculated directly from the employment requirements matrices (ERM) provided by the Bureau of Labor Statistics (BLS). The BLS ERM shows how many jobs are supported by $1 million in final demand in a given industry, jobs both in the industry directly

satisfying the final demand as well as ones supplying inputs. For example, each $1 million in final demand for construction services supports jobs in the construction industry, but also supports jobs in concrete production, bulldozer manufacturing, and accounting services. The ERM tracks how many jobs in these supplier industries are supported by each $1 million in construction services purchased.

Materials supplier jobs

To obtain materials supply jobs per each $1 million in final demand, I sum up all rows in the column vector from the ERM, and then subtract out the direct jobs. For construction, I simply sum all nonconstruction entries in the column vector from the ERM.

Because the ERM is set up in terms of dollar flows rather than job flows, translating a given direct employment impact into an effect on supplier jobs requires a small manipulation. Specifically, I take the ratio of jobs supported by a given amount of spending in an industry that are supplier jobs to direct jobs, and then multiply this ratio by the number of direct jobs identified in the ERM. The estimate for supplier jobs supported by each 100 direct jobs in a given industry is calculated using the following equation (with the subscript "total" representing the sum of direct and material supplies jobs):

$$((ER_{total} - ER_{direct})/ER_{direct}) * 100$$

Even these most basic statistics, derived directly with very little manipulation from the BLS ERM, indicate why using two separate bases for the employment multiplier (per 100 jobs or per $1 million of final demand) might be helpful. Take, for instance, the comparison of *per-job* estimates in two industries—one in which each $1 million in final demand is associated with just one direct job in the industry, but 10 jobs in the materials supplier industries, and another where this split is five direct jobs to six materials supplier jobs. In this case, the sum of direct and material supply jobs in these industries is identical per each $1 million (11 jobs). But comparing them on a *per-job* basis is comparing two very different flows of final demand. In the industry with only one direct job per $1 million of final demand, it takes $100 million in final demand to support 100 direct jobs. But in the industry with five direct jobs per $1 million it takes only $20 million to support 100 direct jobs.

This example might make it seem as if the per-job measure is less useful generally. But that's not necessarily the case. Media reports of plant closings, for example, often report the number of jobs, not the economic output, that will be lost to a local community. Rather than having to guess at the output loss, the per-job multipliers in this report can be used by industry analysts to get an estimate of the economic ripple effects of these losses.

Capital services supplier jobs

One weakness of the BLS ERM is that it does not account for the depreciation of capital goods (plant, equipment, and structures) that is caused by production. This could have nontrivial impacts on jobs supported in capital-intensive industries. Further, because capital-intensive industries often

have quite small numbers of direct jobs associated with a dollar of output, not accounting for the capital services supplies to these industries could greatly underestimate their overall effect on the economy.

To correct this failure to account for capital services supplies, I estimate the number of jobs associated with producing the capital goods that would be needed to replace the amount of depreciation associated with each $1 million in final demand and for each 100 direct jobs in an industry.

I first estimate the value of capital services used in each industry's production. To do this, I use data from the Bureau of Economic Analysis (BEA) on gross domestic product by industry. The KLEMS measures from this data (capital, labor, energy, materials, and suppliers) provide an estimate of the capital share of industry output (that is, the share of income generated by each industry that goes to pay owners of capital goods rather than workers or suppliers). Combining industry output (obtained from the BLS ERM data) with the capital share of output provides an estimate of the amount of new capital goods that must be produced each period to replace this capital service flow. Essentially, capital-intensive industries will have to spend more money to replace capital services that are used up during production. Based on ratios that approximately reflect the economywide division of aggregate capital investment to structures versus equipment, I assume that 40 percent of this total spending flows into construction to replace new structures and that 60 percent flows into equipment manufacturing to replace machinery. I then use the ERM to calculate how many jobs are associated with the production of this structure and equipment investment. This provides my estimate of the number of capital supplier jobs associated with each $1 million in final demand for an industry.

To get a number on capital supplier jobs associated with each direct job in an industry, I make a small manipulation of the data. The first expression, in parentheses, shows how output (measured in dollars) per each 100 workers in a given industry can be calculated. This output measure is then multiplied by the capital share to give the expression for depreciation (or capital service inputs) associated with each 100 jobs in an industry.

$$\left(\frac{\$1{,}000{,}000}{ER_{direct}}\right) * 100 * Capital\ share\ of\ output = Depreciation$$

This measure of depreciation is then used to estimate industry capital demand. From here, the formula for supplier jobs to replace the depreciation involved with every 100 direct jobs in a given industry is:

$$ER_{total_equipment} * \left(\frac{Depreciation}{\$1{,}000{,}000}\right) * 0.6 + ER_{structures} * \left(\frac{Depreciation}{\$1{,}000{,}000}\right) * 0.4$$

Induced jobs

Another category of indirect jobs concerns those that are supported by the demand that relies on the wage and salary income of both direct jobs and supplier jobs. These jobs define the forward linkages from an industry's output. For example, a job at a construction site also supports jobs in

restaurants and diners where construction workers eat, grocery stores where they shop for food, and doctors' offices where they pay for medical services. Public-sector jobs, supported by workers' taxes, also fall into this category.

Jobs supported by respending of income from direct jobs and supplier jobs

The scale of induced jobs supported by each $1 million in final demand or 100 direct jobs in a given industry depends on the overall "respending multiplier," or how much of a worker's earnings are spent on consumption goods. Bivens (2003) reviews evidence on this multiplier and takes 0.5 as a conservative estimate of this effect.[1] Induced jobs also depend on the relative wages of both direct and supplier industries. As an example, if automobile assembly jobs have wages that are 50 percent higher than the economywide average wage, this would lead to spending induced by each 100 jobs in that industry that is 50 percent higher than the economywide average, making the induced spending multiplier this much higher. Further, if the supplier jobs supported by automobile assembly (steel, iron, glass, etc.) pay higher-than-average wages, then this will also increase the induced spending multiplier for the automobile assembly industry.

In this paper, I index hourly wages by industry to establish an economywide average (weighted by hours worked, obtained from the BLS ERM data) equal to 1.0. From here, one can express the induced jobs supported by each $1 million in final demand or 100 direct jobs in an industry as simply 100 times the index of average hourly wages in the industry times 0.5 (our respending multiplier).

For supplier jobs, I multiply the (179 industries) vector of supplier jobs associated with a given $1 million in final demand or 100 direct jobs in the industry by each industry's average hourly wage index, multiply by 0.5 (the respending multiplier), and then sum to estimate the induced spending from *supplier* jobs associated with final demand or direct employment in a given industry.

Public-sector jobs supported by tax revenue

Finally, we can estimate another forward linkage—the number of public-sector jobs (federal, state, and local) associated with each $1 million in final demand or 100 direct jobs in an industry. This measure differs across industries based on the relative wage of the industry. To generate the inputs for this calculation, I multiply each industry's hourly wage by 2,000 to express it as a full-time, full-year salary. For federal taxes, I multiply this figure by 0.2, and for state and local taxes, by 0.1. These provide rough measures of the federal tax revenue and the state and local tax revenue supported by each job in an industry.

I then use BEA data on tax receipts from federal, state, and local governments and BLS CES data on employment counts in these governments to measure how much tax revenue is required to support a public-sector employee in federal employment and how much tax revenue is required to support a public-sector employee in state and local government employment. For each of these two categories of public-sector employment (federal; state and local), I divide the tax revenue generated by each $1 million in final demand or 100 direct jobs in a given industry by this per-employee wage bill, and then sum the two totals, to get a measure of total public-sector employment generated.



AI to Increase Business Earnings: PwC



By Tomás Lujambio | Journalist & Industry Analyst - Thu, 07/13/2023 - 16:57

Artificial intelligence (AI) is not only transforming the work environment and boosting employee productivity but has also significantly enhanced the profitability of numerous industries, found a new report by PwC.

The economic potential of AI is vast, with significant gains projected across the globe. The Global Artificial Intelligence Study led by PwC found that both China and North America are poised to experience the greatest economic impact from AI adoption. The study estimates that China will witness a remarkable 26% boost to its GDP by 2030, followed closely by a 14.5% increase in North America. Together, these regions are projected to account for nearly 70% of the global economic impact of AI, equivalent to US$10.7 trillion.

Available AI tools have increased by 2.5 times between 2017 and 2022, according to QuantumBlack's records from McKinsey & Company. Along with this expansion, AI-based business strategies have translated into approximately 20% in profits thanks to cost reduction, customer and user acquisition, as well as sales growth enabled by the adoption of such technological tools.

AI has immense potential for becoming one of the biggest commercial opportunities in today's economy. "The AI revolution offers r companies in general. On one hand, it is an enabling technology t s processes of all kinds. On the other hand, it provides pow t of any industry: the customer," says Alan Ramí

Leer en Español

DIA assistant ✦

PwC's study found that AI could contribute up to US$15.7 trillion to the global economy in 2030, from which US$6.6 trillion is likely to come from increased productivity and US$9.1 trillion is likely to come from consumption. This means global GDP will be 14% higher in 2030 as a result of AI tools.

As Mexico navigates the evolving digital landscape, it is crucial for policymakers, businesses and stakeholders to collaborate in creating an enabling environment for AI adoption. By strategically investing in AI, Mexico can position itself as a leader in one of the most benefited regions of this technological revolution. Integrating such tools could potentially attract foreign investment, fostering innovation and propelling economic prosperity in industries such as automotive, healthcare, finance, manufacturing and logistics, among many others.

Photo by: Image by Gerd Altmann from Pixabay

TAGS:

Artificial Intelligence | AI tools | GDP | PwC | McKinsey & Company | employee productivity | global economy | Finance | Technology | MBN | Mexico Business News | AI Cloud & Data

DIA assistant ✦

DIA assistant

Exhibit C.II – Second Prong – Well-Positioned to Advance the Proposed Endeavor

Please refer to all of the documents from Exhibit B

Exhibit C.II – Second Prong – Financial Feasibility

CIBC Account Statement

GUILHERME PEREIRA SILVA ALVES

The names shown are based on our current records, as of April 24, 2026. This statement does not reflect any changes in account holders and account holder names that may have occurred prior to this date.

For Mar 1 to Mar 31, 2026

Account number
56-23294

Branch transit number
00917

Account summary

Opening balance on Mar 1, 2026		$56,652.93
Withdrawals	-	0.00
Deposits	+	14.43
Closing balance on Mar 31, 2026	**=**	**$56,667.36**

Contact information

☎ **1 800 465 CIBC (2422)**
Contact us by phone for questions on this update, change of personal information, and general inquiries, 24 hours a day, 7 days a week.

TTY hearing impaired
1 800 465 7401

Outside Canada and the U.S.
1 902 420 CIBC (2422)

www.cibc.com

Transaction details

Date	Description	Withdrawals ($)	Deposits ($)	Balance ($)
Mar 1	**Opening balance**			**$56,652.93**
Mar 31	INTEREST		14.43	56,667.36
	Closing balance			**$56,667.36**

Important: This statement will be considered correct if you do not report errors, omissions or irregularities in entries and balances to CIBC in writing within the period applicable to your regular account recordkeeping option, as follows:

- Bankbook or paperless: 60 days from the date the entry was, or should have been, posted; or
- Statement: 30 days from last date of the statement period covered by a previously issued regular statement where such period included the date the entry was, or should have been, posted.

This rule does not apply to improper credits to your account. Your rights under your Personal Account Agreement to verify and notify CIBC of account errors, omissions or irregularities do not apply to this statement which is for information or replacement purposes only.

***Foreign Currency Conversion Fee:**
If you withdraw foreign currency from a bank machine located outside Canada, you are charged the same conversion rate CIBC is required to pay plus an administration fee, which is disclosed in the CIBC *Personal Account Service Fees* brochure, a copy of which is available at any CIBC branch in Canada (this is in addition to any transaction fee applicable to the withdrawal and the network fee).

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GUILHERME PEREIRA DA SILVA ALVES - 1820893669 - TFSA

Investments

As at April 23, 2026

INVESTMENT FUNDS - CLASSIC SERIES 75/75 **$66,824.32**

Fund name	Units	Unit value	Value
Canadian Equity funds			
48051 - Strategic Equity Income (iA)	589.3460	34.6847	$20,441.29
47901 - Fidelity Canadian Opportunities	84.1929	156.7268	$13,195.28
U.S. & International Equity Funds			
40191 - Global Opportunities (Loomis Sayles)	1,005.1520	16.9606	$17,047.98
40081 - Fidelity Global Concentrated Equity	820.5771	19.6688	$16,139.77
		Total	**$66,824.32**

Your advisor : KERRI ANDERSON

PHONE
(403) 454-1635

Customer service

BUSINESS HOURS
Monday to Friday, 8:00 am to 5:00 pm (ET and PT)

TOLL FREE
1 844 442-4636

EMAIL
savings@ia.ca

Email exchanges are not a secure method for sharing information.

Exhibit D - Personal Documents

Validate at www.ocartorio.net

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

Judiciary - State of Goiás
Electronic Inspection Seal
02001210181843091006183
Consult this seal at
http://extrajudicial.tjgo.jus.br/selo

BIRTH CERTIFICATE

Name
GUILHERME PEREIRA DA SILVA ALVES

Registration
025023 01 55 1987 1 00071 132 0048393 09

Date of birth in full	Day	Month	Year
January eighth, nineteen eighty-seven **	08	01	1987

Time of birth	City of birth and state
3:23 PM	Goiânia-Goiás **

City of registration and state	Place of birth	Sex
Goiânia-Goiás **	Santa Casa de Misericórdia **	Male

Filiation
ANTONIO ALVES DA SILVA **
VERA LUCIA PEREIRA DA SILVA ALVES **

Grandparents
Paternal: OTACIANO JOSÉ DA SILVA **
and MARIA AMELIA DA SILVA **
Maternal: ODILON PEREIRA DA SILVA **
and MARIA GUILHERME DA SILVA **

Twin	Name of the twin(s)
No	---------- **

Date of registration in full	Number of Live Birth Certificate
January eleventh, nineteen eighty-seven **	----------

Notes / Annotations
No record. Fees: R$ 23.37; Judicial Fee: R$ 10.11. **

Name of the Office
4TH CIVIL REGISTRY OFFICE AND NOTARY PUBLIC OFFICE OF THE JUDICIAL DISTRICT OF GOIÂNIA

Registrar
Bachelor Francisco José Taveira

City / State
Goiânia - State of Goiás

Address
Avenida Tocantins, 283, Centro
ZIP Code: 74.015-010 - Phone: (62) 3212-1030

The content of this certificate is true. I certify.

Goiânia-Goiás, August 16, 2013.

Livanilda Maria da Silva
----//signature//----

Deputy Registrar

FRANCISCO TAVEIRA
REGISTRY OFFICE
4TH CIVIL REGISTRY OFFICE AND NOTARY PUBLIC OFFICE

Avenida Tocantins, 283, Centro, Goiânia - Goiás

Livanilda Maria da Silva
Deputy Registrar

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: August 4, 2026.

validar em www.ocartorio.net

Poder Judiciário Estado de Goiás
Selo Eletrônico de Fiscalização
02001210181843091006183
Consulte este selo em
http://extrajudicial.tjgo.jus.br/selo

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

CERTIDÃO DE NASCIMENTO

Nome

GUILHERME PEREIRA DA SILVA ALVES

Matrícula

025023 01 55 1987 1 00071 132 0048393 09

Data do nascimento por extenso	Dia	Mês	Ano
Oito de janeiro de um mil e novecentos e oitenta e sete ••	08	01	1987

Hora	Município do nascimento e unidade de federação
15h 23min	Goiânia-GO ••

Município de registro e unidade de federação	Local de nascimento	Sexo
Goiânia-GO ••	Santa Casa de Misericórdia ••	Masculino

Filiação
ANTONIO ALVES DA SILVA ••
VERA LUCIA PEREIIRA DA SILVA ALVES ••

Avós
Paternos: OTACIANO JOSÉ DA SILVA ••
e MARIA AMELIA DA SILVA ••
Maternos: ODILON PEREIRA DA SILVA ••
e MARIA GUILHERME DA SILVA ••

Gêmeo	Nome do(s) gêmeo(s)
Não	---------- ••

Data do registro por extenso	Número da D.N.V
Onze de janeiro de um mil e novecentos e oitenta e sete ••	----------

Observações / Averbações
Nada consta. Emolumentos: R$23,37; Taxa Judiciária : R$10,11. ••

Nome do Ofício
4º REGISTRO CIVIL E TABELIONATO DE NOTAS DA COMARCA DE GOIÂNIA

Oficial Registrador
Bel. Francisco José Taveira

Município / UF
Goiânia - Estado de Goiás

Endereço
Av. Tocantins, 283, Centro
CEP: 74.015-010 - Fone: (62)3212-1030

O conteúdo da certidão é verdadeiro. Dou fé.

Goiânia-GO, 16 de agosto de 2013.

Livanilda Maria da Silva
Suboficial

CARTÓRIO FRANCISCO TAVEIRA
4º REGISTRO CIVIL E TABELIONATO DE NOTAS
Av. Tocantins, 283, Centro, Goiânia - GO

Livanilda Maria da Silva
Suboficial

ENDORSEMENTS AND LIMITATIONS
This passport is valid for all countries unless otherwise specified. The bearer must comply with any visa or other entry regulations of the countries to be visited.

SEE OBSERVATIONS BEGINNING ON PAGE 5 (IF APPLICABLE)

MENTIONS ET RESTRICTIONS
Ce passeport est valable pour tous les pays, sauf indication contraire. Le titulaire doit se conformer aux formalités relatives aux visas ou aux autres formalités d'entrée des pays où il a l'intention de se rendre.

VOIR LES OBSERVATIONS DÉBUTANT À LA PAGE 5 (LE CAS ÉCHÉANT)

Signature of bearer - Signature du titulaire



EPD681666

AW190712

PASSPORT
PASSEPORT

CANADA



Type/Type
P

Issuing Country/Pays émetteur
CAN

Passport No./N° de passeport
AW190712

Surname/Nom
PEREIRA DA SILVA ALVES

Given names/Prénoms
GUILHERME

Nationality/Nationalité
CANADIAN/CANADIENNE

Date of birth/Date de naissance
08 JAN /JAN 87

Sex/Sexe
M

Place of birth/Lieu de naissance
GOIANIA BRA

Date of issue/Date de délivrance
21 DEC /DÉC 23

Date of expiry/Date d'expiration
21 DEC /DÉC 33

Issuing Authority/Autorité de délivrance
CALGARY SOUTH

EPD681666

P<CANPEREIRA<DA<SILVA<ALVES<<GUILHERME<<<<<<

AW190712<0CAN8701082M3312212<<<<<<<<<<<<<<04

Guilherme Pereira da Silva Alves

Assinatura do titular / *Signature du titulaire /*
Bearer's signature / Firma del titular

REPÚBLICA FEDERATIVA DO BRASIL

YF463357

Este passaporte deve ser assinado
pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé
par le titulaire, sauf en cas d'incapacité.

This passport must be signed,
except where the bearer is unable to do so.

Este pasaporte debe ser firmado
por el titular, salvo en caso de incapacidad.



REPÚBLICA FEDERATIVA DO BRASIL

PASSAPORTE
PASSPORT

TIPO / *TYPE*
PP

PAÍS EMISSOR / *ISSUING COUNTRY*
BRA

PASSAPORTE Nº / *PASSPORT No.*
YF463357

SOBRENOME / *SURNAME*
PEREIRA DA SILVA ALVES





NOME / *GIVEN NAMES*
GUILHERME

NACIONALIDADE / *NATIONALITY*
BRASILEIRO(A)

DATA DE NASCIMENTO / *DATE OF BIRTH*
08 JAN/JAN 1987

CPF / *PERSONAL NUMBER*
014671021-56

SEXO / *SEX*
M

NATURALIDADE / *PLACE OF BIRTH*
GOIÂNIA/GO

FILIAÇÃO / *FILIATION*
VERA LUCIA PEREIRA DA SILVA ALVES

ANTONIO ALVES DA SILVA

DATA DE EXPEDIÇÃO / *DATE OF ISSUE*
30 MAR/MAR 2026

VÁLIDO ATÉ / *DATE OF EXPIRY*
29 MAR/MAR 2036

AUTORIDADE / *AUTHORITY*
VANCOUVER CG

PPBRAPEREIRA<DA<SILVA<ALVES<<GUILHERME<<<<<<
YF463357<7BRA8701082M3603295014671021 56<<<18

FRANCISCO TAVEIRA
REGISTRY OFFICE
4TH CIVIL REGISTRY OFFICE AND NOTARY PUBLIC OFFICE
Avenida Tocantins, 283, Centro. ZIP Code 74015-010, Goiânia - Goiás
Phone/fax: 62. **3212-1030.**

FEDERATIVE REPUBLIC OF BRAZIL
STATE OF GOIÁS - JUDICIAL DISTRICT OF GOIÂNIA

Book BA-039 Page 045 Entry 013830

MARRIAGE CERTIFICATE

GUILHERME PEREIRA DA SILVA ALVES
RENATA RODRIGUES DE OLIVEIRA ALVES

Registration: 025023 01 55 2013 3 00039 045 0013830 16

Full birth names, dates and places of birth, nationality, and filiation of the spouses

GUILHERME PEREIRA DA SILVA ALVES, born on January 8, 1987, in Goiânia-Goiás, Brazilian, single, son of ANTONIO ALVES DA SILVA and VERA LUCIA PEREIRA DA SILVA ALVES**

RENATA RODRIGUES DE OLIVEIRA, born on December 2, 1987, in Goiânia-Goiás, Brazilian, single, daughter of RUBENS DE OLIVEIRA and MARIA APARECIDA RODRIGUES OLIVEIRA**

Date of marriage registration (in full): October twenty-Four, two thousand thirteen ** | Day: 24 | Month: 10 | Year: 2013

Marital property regime: Partial Community Property **

Name each spouse began to use (if changed): RENATA RODRIGUES DE OLIVEIRA ALVES **

Notes / Annotations: The marriage was solemnized on October 24, 2013, Igreja de Cristo - Jardim Planalto. Fees: R$230.21; Judicial Fee: R$10.11. **

Seal: 02001210301737086000275

consult it: http://extrajudicial.tjgo.jus.br/selo

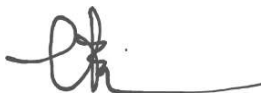
The content of this certificate is true. I certify.

Goiânia-Goiás, October 24, 2013.

Livanilde Maria da Silva
Deputy Registrar

FRANCISCO TAVEIRA
REGISTRY OFFICE
4th
CIVIL REGISTRY OFFICE AND NOTARY PUBLIC OFFICE
GOIÂNIA - GOIÁS

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



Date: July 29, 2026.

CARTÓRIO
FRANCISCO TAVEIRA
4º REGISTRO CIVIL E TABELIONATO DE NOTAS
Av. Tocantins, 283, Centro. CEP 74015-010, Goiânia - GO.
Telefax: 62 . 3212 1030.

REPÚBLICA FEDERATIVA DO BRASIL
ESTADO DE GOIÁS - COMARCA DE GOIÂNIA

Livro BA-039 Folha 045 Termo 013830

CERTIDÃO DE CASAMENTO

GUILHERME PEREIRA DA SILVA ALVES
RENATA RODRIGUES DE OLIVEIRA ALVES

Matrícula: 025023 01 55 2013 3 00039 045 0013830 16

Nomes completos de solteiro, datas e locais de nascimento, nacionalidade e filiações dos cônjuges

GUILHERME PEREIRA DA SILVA ALVES, nascido aos 08 de janeiro de 1987, natural de Goiânia-GO, de nacionalidade brasileira, solteiro filho de ANTONIO ALVES DA SILVA e de VERA LUCIA PEREIRA DA SILVA ALVES••

RENATA RODRIGUES DE OLIVEIRA, nascida aos 02 de dezembro de 1987, natural de Goiânia-GO, de nacionalidade brasileira, solteira, filha de RUBENS DE OLIVEIRA e de MARIA APARECIDA RODRIGUES OLIVEIRA••

Data do registro do casamento (por extenso): Vinte e quatro de outubro de dois mil e treze ••
Dia: 24 | Mês: 10 | Ano: 2013

Regime de bens do casamento: Comunhão Parcial de Bens ••

Nome que cada um dos cônjuges passou a utilizar (quando houver alteração): RENATA RODRIGUES DE OLIVEIRA ALVES ••

Observações / Averbações:
O casamento foi realizado aos 24 de outubro de 2013, Igreja de Cristo - Jardim Planalto
Emolumentos: R$230,21; Taxa Judiciária: R$10,11. ••

Selo: 02001210301737086000275

consulte:http://extrajudicial.tjgo.jus.br/selo

O conteúdo da certidão é verdadeiro. Dou fé.

Goiânia-GO, 24 de outubro de 2013.

Livanilde Maria da Silva
Suboficial

CARTÓRIO FRANCISCO TAVEIRA
4º REGISTRO CIVIL E TABELIONATO DE NOTAS
GOIÂNIA - GO

SILVA REGISTRY OFFICE

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

Judiciary of the State of Goiás
Electronic Inspection Seal
01971712271750128606109
Check this seal at:
https://portal-extrajudicial.tjgo.jus.br

FULL BIRTH CERTIFICATE WITH MARRIAGE ANNOTATION

Name

**** RENATA RODRIGUES DE OLIVEIRA ****

Registration:

024729 01 55 1987 1 00084 284 0100180 85

Description

I **CERTIFY** that, upon examining the BIRTH RECORD books of this Registry Office, at the request of the interested party, I found an entry with the following content: under number one hundred thousand, one hundred and eighty, page two hundred eighty-four of book A-eighty-four, on the seventh day of the month of December of the year nineteen eighty-seven (12/07/1987), in this City and Judicial District of Goiânia, State of Goiás, RUBENS DE OLIVEIRA appeared, who, in the presence of the instrumental witnesses named and signed below, declared that, on the second day of the month of December of the year nineteen eighty-seven (12/02/1987), at three forty-five (3:45 p.m.), at Fêmina Maternity, in this Capital, a female child was born and was given the name: **RENATA RODRIGUES DE OLIVEIRA**, daughter of **RUBENS DE OLIVEIRA** and **MARIA APARECIDA RODRIGUES OLIVEIRA**, 27 years old, Brazilians, occupations merchant and bank employee, born respectively in Uberaba-Minas Gerais, and São Luiz de Montes Belos-Goiás, married, residing and domiciled in this Capital, the paternal grandparents are **OSORIO ALVES DE OLIVEIRA** and **ALTIVA NUNES DA SILVA**; and the maternal grandparents are **INOCENCIO RODRIGUES NETO** and **DIVA ALVES RODRIGUES**. Nothing further was declared by the declarant and the witnesses Eleuza da Silva Couto and Marlene de Sousa Diniz, residing and domiciled in this Capital. There was nothing further for me to certify. This is the full content record in the aforementioned book, which this certificate has been faithfully and accurately issued from the original, to which I refer and certify. *.
Note: The following MARGINAL NOTE and ANNOTATION appear on the above-mentioned record: According to the notice sent by the 4th Civil Registry Office and Notary Public Office of Goiânia/Goiás, the **Marriage** Registration of the registrant and GUILHERME PEREIRA DA SILVA ALVES was drawn up on 10/24/2013, in Book BA-039, Page 045 and Entry 013830. The groom continued to use the name **GUILHERME PEREIRA DA SILVA ALVES**, and the bride adopted the name **RENATA RODRIGUES DE OLIVEIRA ALVES**. **Electronic Seal: 01971807101649128900161**, annotated on 09/27/2018. The registrant **RENATA RODRIGUES DE OLIVEIRA ALVES** is enrolled under **CPF No. 024.935.801-84**, as verified on this date through the database of the Federal Revenue Service of Brazil made available by the Civil Registry Information Center-CRC. Electronic Seal: 01971807101649128900164, recorded by marginal notation on 09/27/2018. There was nothing further for me to certify. Fees: R$31.00; Judicial Fee: R$13.13; State Funds: R$12.09; Service Tax (ISS): R$1.55

Name of the Office
1st Civil Registry Office and Notary Public Office

Registrar
Mateus da Silva

City and Judicial District / State
Goiânia - State of Goiás

Address
Avenida 85, Block 231, Lots 25/26 - Setor Marista
ZIP Code: 74160-010 - Phone: (62) 3926-0300 - 3928-0300

The content of this certificate is true. I certify.

Goiania-Goiás, September 27, 2018.

----//signature//----

Luzia de Jesus Silva
Clerk

Silva Registry Office
1st Civil Registry Office and Notary Public Office
Avenida 85, Block 231
Lots 25/26, Setor Marista
ZIP Code 74160-010
3926-0300 / 3928-0300
Goiânia-Goiás

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: August 4, 2026.

CARTÓRIO SILVA

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

Poder Judiciário Estado de Goiás
Selo Eletrônico de Fiscalização
01971712271750128606109
consulte esse selo em
http://extrajudicial.tjgo.jus.br/selo

CERTIDÃO DE NASCIMENTO
INTEIRO TEOR
COM ANOTAÇÃO DE CASAMENTO

Nome
**** RENATA RODRIGUES DE OLIVEIRA ****

Matrícula
024729 01 55 1987 1 00084 284 0100180 85

Descrição

CERTIFICO que revendo os livros de REGISTRO DE NASCIMENTOS deste Ofício, a pedido da pessoa interessada, neles encontrei um termo, de teor seguinte: sob número cem mil e cento e oitenta, folha duzentos e oitenta e quatro do livro A-oitenta e quatro, aos sete dias do mês de dezembro do ano de um mil e novecentos e oitenta e sete (07/12/1987), neste Município e Comarca de Goiânia, Estado de Goiás, compareceu RUBENS DE OLIVEIRA, o qual na presença das testemunhas instrumentárias abaixo nominadas e assinadas declarou que, aos dois dias do mês de dezembro do ano de um mil e novecentos e oitenta e sete (02/12/1987), às quinze horas e quarenta e cinco minutos (15:45h), na Maternidade Fêmina, nesta Capital, nasceu uma pessoa do sexo feminino, que recebeu o nome de: **RENATA RODRIGUES DE OLIVEIRA**, filha de **RUBENS DE OLIVEIRA** e de **MARIA APARECIDA RODRIGUES OLIVEIRA**, 27 anos, nacionalidades brasileiras, profissões comerciante e bancária, naturais respectivamente Uberaba-MG e S. Luiz de Montes Belos-GO, casados, residentes e domiciliados em nesta Capital, sendo avós paternos **OSORIO ALVES DE OLIVEIRA** e **ALTIVA NUNES DA SILVA**; e avós maternos **INOCENCIO RODRIGUES NETO** e **DIVA ALVES RODRIGUES**. Nada mais declarou, declarante com as testemunhas Eleuza da Silva Couto e Marlene de Sousa Diniz, residentes e domiciliados nesta Capital. Nada mais me cumpria certificar. Era o que continha em dito assento o qual foi bem e fielmente extraído do próprio original, ao qual me reporto e dou fé. **

Observação: Consta do referido Assento a seguinte AVERBAÇÃO e ANOTAÇÃO: Conforme comunicado enviado pelo 4º Registro Civil e Tabelionato de Notas de Goiânia/GO, foi lavrado em 24/10/2013 no Livro BA-039, Folhas 045 e Termo 013830 o Registro do **Casamento** da registranda com GUILHERME PEREIRA DA SILVA ALVES. O contraente continuou a adotar o nome de **GUILHERME PEREIRA DA SILVA ALVES** e a contraente passou a adotar o nome de **RENATA RODRIGUES DE OLIVEIRA ALVES**. **Selo Eletrônico: 01971807101649128900161**, anotado no dia 27/09/2018. A registrada **RENATA RODRIGUES DE OLIVEIRA ALVES**, está inscrita no **CPF nº 024.935.801-84**, conforme consulta realizada nesta data junto à base de dados da Receita Federal do Brasil disponibilizada pela Central de Informações do Registro Civil-CRC. Selo Eletrônico: 01971807101649128900164, averbado no dia 27/09/2018. Nada mais me cumpria certificar. Emolumentos: R$31,00; Taxa Judiciária: R$13,13; Fundos Estaduais: R$12,09; ISS R$1,55

Nome do Ofício
1º Registro Civil e Tabelionato de Notas

Oficial Registrador
Mateus da Silva

Município e Comarca / UF
Goiânia - Estado de Goiás

Endereço
Avenida 85, Quadra 231, Lote 25/26 - Setor Marista
CEP 74.160-010 - Fone: (62) 3926-0300 - 3928-0300

O conteúdo da certidão é verdadeiro. Dou fé.

Goiânia - GO, 27 de setembro de 2018

Luzia de Jesus Silva
Escrevente

Cartório Silva
1º Registro Civil e Tabelionato de Notas
Av. 85, Qd. 231
Lts. 25/26 St. Marista
CEP 74.160-010
3926-0300 / 3928-0300
Goiânia - GO

BIRTH·NAISSANCE

Alberta
Canada

BIRTH CERTIFICATE
CERTIFICAT DE NAISSANCE

REGISTRAR VITAL STATISTICS

Certified extract from Registration of Birth filed at Edmonton, Alberta, Canada.

Extrait certifié conforme de l'enregistrement de naissance, Edmonton, Alberta, Canada.

Ronda Goulden
Registrar of Vital Statistics

DVS 3413 (2021/12)

Surname Nom	Oliveira Alves
Given Names Prénoms	Ethan
Date of Birth Date de naissance	Sep 16, 2024
Sex Sexe	M
Place of Birth Lieu de naissance	Calgary
Registration No. N° d'enregistrement	2024-08-036681
Registration Date Date d'enregistrement	Sep 18, 2024
Date Issued Délivré le	Sep 19, 2024
Name of Parent Nom de Parent	Rodrigues de Oliveira Alves, Renata
Place of Birth Lieu de naissance	Brazil
Name of Parent Nom de Parent	Pereira da Silva Alves, Guilherme
Place of Birth Lieu de naissance	Brazil

A B 0 2 1 0 6 0 0 3

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

BIRTH CERTIFICATE

NAME

ETHAN OLIVEIRA ALVES

CPF

124.310.331-04

REGISTRATION

021238 01 55 2025 7 00116 261 0036027 28

DATE OF BIRTH IN FULL	Day	Month	Year
SEPTEMBER SIXTEENTH, TWO THOUSAND TWENTY-FOUR	16	09	2024

TIME OF BIRTH	PLACE OF BIRTH
11:09 PM	CALGARY, ALBERTA, CANADÁ

CITY OF REGISTRATION AND STATE	PLACE, CITY OF BIRTH AND STATE	SEX
Brasília-Federal District	SOUTH HEALTH CAMPUS HOSPITAL, CALGARY, ALBERTA, CANADÁ	Male

1st FILIATION	PLACE OF BIRTH 1st FILIATION
GUILHERME PEREIRA DA SILVA ALVES	GOIÂNIA - GOIÁS

GRANDPARENTS OF 1st FILIATION

ANTONIO ALVES DA SILVA and VERA LUCIA PEREIRA DA SILVA ALVES

2nd FILIATION	PLACE OF BIRTH 2nd FILIATION
RENATA RODRIGUES DE OLIVEIRA ALVES	GOIÂNIA - GOIÁS

GRANDPARENTS OF 2nd FILIATION

RUBENS DE OLIVEIRA and MARIA APARECIDA RODRIGUES OLIVEIRA

TWIN	NAME AND REGISTRATION NUMBER OF TWINS
NO	

DATE OF REGISTRATION (IN FULL)	COUNTRY OF ORIGIN
MARCH FOURTEENTH, TWO THOUSAND TWENTY-FIVE	Canadá

ANNOTATIONS/NOTES TO BE ADDED

VOLUNTARY REGISTRATION NOTES

The birth was registered at the Consulate of Brazil in Vancouver and transcribed in this Registry Office in accordance with §1 of Article 32 of Law 6015/73. Brazilian in accordance with Article 12, paragraph I, item c of the Federal Constitution, as amended by Constitutional Amendment No. 54 of 09/20/2007.

CNS No. 0.2123-8
1st Civil Registry Office of Natural Persons
Brasília / Federal District
MARCELO CAETANO RIBAS
Registrar:
SCS Quadra 08, Block B-60, Room 140/E, Venâncio 2000 Building
Phone: (61) 3224-4026
ZIP Code: 70333-900

Seal No. TJDFT20250210019771SSLD
To verify the seal, visit: www.tjdft.jus.br

The content of this certificate is true. I certify.
Brasília-Federal District, March 14, 2025

----//signature//----
Registrar

1st CIVIL
REGISTRY OFFICE
Marcus Antonio Da Costa Oliveira
Deputy Clerk
BRASÍLIA **FEDERAL DISTRICT**

IA 001961192

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: August 4, 2026.

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

CERTIDÃO DE NASCIMENTO

NOME

ETHAN OLIVEIRA ALVES

CPF
124.310.331-04

MATRÍCULA
021238 01 55 2025 7 00116 261 0036027 28

DATA DE NASCIMENTO POR EXTENSO
DEZESSEIS DE SETEMBRO DE DOIS MIL E VINTE E QUATRO

Dia	Mês	Ano
16	09	2024

HORA DE NASCIMENTO
23:09

NATURALIDADE
CALGARY, ALBERTA, CANADÁ

MUNICÍPIO DE REGISTRO E UNIDADE DE FEDERAÇÃO
Brasília-DF

LOCAL, MUNICÍPIO DE NASCIMENTO E UF
SOUTH HEALTH CAMPUS HOSPITAL, CALGARY, ALBERTA, CANADÁ

SEXO
Masculino

1ª FILIAÇÃO
GUILHERME PEREIRA DA SILVA ALVES

NATURALIDADE 1ª FILIAÇÃO
GOIÂNIA - GO

GENITORES DA 1ª FILIAÇÃO
ANTONIO ALVES DA SILVA e VERA LUCIA PEREIRA DA SILVA ALVES

2ª FILIAÇÃO
RENATA RODRIGUES DE OLIVEIRA ALVES

NATURALIDADE 2ª FILIAÇÃO
GOIÂNIA - GO

GENITORES DA 2ª FILIAÇÃO
RUBENS DE OLIVEIRA e MARIA APARECIDA RODRIGUES OLIVEIRA

GÊMEOS
NÃO

NOME E MATRÍCULA DOS GÊMEOS

DATA DO REGISTRO DE NASCIMENTO (POR EXTENSO)
QUATORZE DE MARÇO DE DOIS MIL E VINTE E CINCO

PAÍS DE ORIGEM
Canadá

AVERBAÇÕES/ANOTAÇÕES À ACRESCER

ANOTAÇÕES VOLUNTÁRIAS DE CADASTRO
O nascimento foi registrado no Consulado do Brasil em Vancouver e transcrito neste Cartório de acordo com o §1º do art. 32 da Lei 6015/73. Brasileiro(a) nato(a) de acordo com o art. 12, inciso I, alínea c da Constituição Federal com redação dada pela Emenda Constitucional nº 54 de 20.09.2007.

CNS nº 0.2123-8
1° Ofício de Registro Civil das Pessoas Naturais
Brasília / DF
MARCELO CAETANO RIBAS
Oficial(a) Registrador(a):
SCS Qd. 08 - Bl B-60 Sl 140/E - Ed.Venâncio 2000
Telefone: (61) 3224-4026
CEP: 70333-900

Selo nº TJDFT20250210019771SSLD
Para consultar acesse www.tjdft.jus.br

O conteúdo da certidão é verdadeiro. Dou Fé.
Brasília-DF, 14 de março de 2025

Oficial

CARTÓRIO DO 1º OFÍCIO DE REGISTRO CIVIL
Marcus Antonio da Costa Oliveira
Escrev. Subst.
BRASÍLIA DF

IA 001961192

Indústria Gráfica Brasileira ltda

FEDERATIVE REPUBLIC OF BRAZIL
CIVIL REGISTRY OF NATURAL PERSONS

Judiciary of the State of Goiás
Electronic Inspection Seal

00062306110169429970017

Check this seal at:
https://portal-extrajudicial.tjgo.jus.br

CERTIFIED COPY OF BIRTH CERTIFICATE

Name

ERICK OLIVEIRA ALVES

Registration: 024729 01 55 2023 7 00175 009 0039600 19

Description

I **CERTIFY** that, in the book, page, and entry cited, of the REGISTER OF EMANCIPATION, INTERDICTION, ABSENCE, AND TRANSCRIBED RECORDS of this Registry Office, it is recorded that, on June 19, 2023, the Birth Registration of **ERICK OLIVEIRA ALVES** was drawn up. Male, born on May 4, 2020, at six twenty-six (06:26 a.m.), at Saint Boniface Hospital, Winnipeg, Manitoba, Canada, son of **GUILHERME PEREIRA DA SILVA ALVES**, Brazilian, born in Goiânia, Goiás, Brazil; and **RENATA RODRIGUES DE OLIVEIRA ALVES**, Brazilian, born in Goiânia, Goiás, Brazil.

Paternal grandparents: ANTONIO ALVES DA SILVA and VERA LUCIA PEREIRA DA SILVA ALVES.

Maternal grandparents: RUBENS DE OLIVEIRA and MARIA APARECIDA RODRIGUES OLIVEIRA.

The Declarant was: RENATA RODRIGUES DE OLIVEIRA ALVES.

Natural-born Brazilian, pursuant to the provisions of item "c" of paragraph I of Article 12, in limine, of the Federal Constitution. Record drawn up in accordance with Resolution No. 155 of the National Justice Council. In accordance with Article 32, paragraphs 1 and 2 of Law No. 6.015 of 12/31/1973.

Note: The original registration is recorded at the Consulate General of Brazil in Vancouver, book 9, page 295, under No. 2695, issued by Deputy Consul General Julio Cesar Fontes Laranjeira, of 04/11/2022. Fees: Registration fee: R$84.96; Judicial fee: R$18.29; State Funds: R$18.05; ISS (Service Tax): R$4.25.

Name of the Office
1st Civil Registry Office of Natural Persons, Guardianships and Conservatorships, Notary Public Office, and Registry Office for Maritime Contracts - Silva Registry Office

Registrar
Mateus da Silva

City and Judicial District / State
Goiânia - State of Goiás

Address
Avenida 85, Block 231, Lots 25/26, No. 2451 - Setor Marista
ZIP Code: 74160-010 - Phone: (62) 3926-0300 / (62) 3928-0300
Email: sac@cartoriosilvagoiania.com.br
Website: cartoriosilvagoiania.com.br

The content of this certificate is true. I certify.

Goiania-Goiás, June 19, 2023.

----//signature//----

Ludimila Carvalho Tobias
Clerk

ARPENBRASIL AA 027833696 BRP

REGISTRATION DETAILS

Registration	0018830155 1987 1 0003 050 0000533 31	cc (55) Type of Service Provided, being: 55: Civil Registration Service for Natural Persons		ffff (0003)	Book number
Standard	aaaaaabbcc dddd e ffff ggg hhhhhhh ii			ggg (050)	Sheet number
DETAILS		dddd (1987) Year of Registration		hhhhhhh (0000533)	Term Number
aaaaaa (00188-3)	National Service Code (Unique identification of the registry office)	e (1) Type of book, being:		ii (31)	Check Digit
bb (01)	Collection Code, being: 01 - Own Collection Other Incorporated Collections	1: Book A (Birth) 2: Book B (Marriage) 3: Auxiliary Book B (Record of Religious marriage for civil purposes)	4: Book C (Death) 5: Book C (Stillborn Registry) 6: Book D (Publication of Banns) 7: Book E (Other Acts Related to Civil Registration)		

Exclusive use for issuing civil registration certificates for natural persons

I, Carolina Favero da Silva, telephone number 415 425-2508, mailing address P.O. Box 90487, San Diego, CA 92169, certify that the professional translation of this document from Portuguese to English has been performed by myself, a qualified translator fluent in both languages, and that the following is an accurate and complete translation of the document.



_____ Date: August 5, 2026.

REPÚBLICA FEDERATIVA DO BRASIL
REGISTRO CIVIL DAS PESSOAS NATURAIS

Poder Judiciário Estado de Goiás
Selo Eletrônico de Fiscalização
00062306110169429970017
Consulte este selo em
https://portal-extrajudicial.tjgo.jus.br

TRASLADO DE NASCIMENTO

Nome

ERICK OLIVEIRA ALVES

Matrícula: 024729 01 55 2023 7 00175 009 0039600 19

Descrição

CERTIFICO que, do livro, folha e termo citados, de ASSENTO DE EMANCIPAÇÃO, INTERDIÇÃO E AUSÊNCIA E TRASLADO deste Serviço Registral, consta que, foi lavrado no dia 19 de junho de 2023, o assento de Nascimento de: **ERICK OLIVEIRA ALVES**, do sexo masculino, nascido no dia 04 de maio de 2020, às seis horas e vinte e seis minutos (06:26h) em Saint Boniface Hospital, Winnipeg, Manitoba, Canadá, filho de **GUILHERME PEREIRA DA SILVA ALVES**, brasileiro, natural de(o)(a) Goiânia, Goiás, Brasil; e **RENATA RODRIGUES DE OLIVEIRA ALVES**, brasileira, natural de(o)(a) Goiânia, Goiás, Brasil.
Avós paternos ANTONIO ALVES DA SILVA e VERA LUCIA PEREIRA DA SILVA ALVES.
Avós maternos RUBENS DE OLIVEIRA e MARIA APARECIDA RODRIGUES OLIVEIRA.
Foi declarante RENATA RODRIGUES DE OLIVEIRA ALVES.
Brasileiro nato, conforme os termos da alínea "c" do inciso I do art. 12, in limine, da Constituição Federal. Registro Lavrado de acordo com a Resolução nº 155 do Conselho Nacional de Justiça.
Conforme Artigo 32, parágrafos 1º e 2º da Lei nº 6.015, de 31/12/1973.
Observação: O registro original consta no Consulado-Geral do Brasil em Vancouver, livro 9, folha 295, sob o nº 2695, expedido pelo Cônsul-Geral Adjunto Julio Cesar Fontes Laranjeira, livro 11/04/2022. Emolumentos: R$84,96; Taxa Judiciária: R$18,29, Fundos Estaduais: R$18,05, ISS: R$4,25

O conteúdo da certidão é verdadeiro. Dou fé.

Goiânia-GO, 19 de junho de 2023.

Ludimila Carvalho Tobias
Escrevente

Nome do Ofício
1º Registro Civil de Pessoas Naturais, Interdições e Tutelas, Tabelionato de Notas e Oficialato de Registros de Contratos Marítimos - Cartório Silva

Oficial Registrador
Mateus da Silva

Município e Comarca / UF
Goiânia - Estado de Goiás

Endereço
Avenida 85, Quadra 231, Lote 25/26, Nº 2451 - Setor Marista
CEP: 74.160-010 - Fone: (62) 3926-0300 - 3928-0300
E-mail: sac@cartoriosilvagoiania.com.br
Site: cartoriosilvagoiania.com.br

ARPENBRASIL AA 027833696 BRP

AMENTO DA MATRÍCULA

a 0018830155 1987 1 0003 050 0000533 31 aaaaaabbcc dddd e ffff ggg hhhhhhh ii	cc (55) Tipo de Serviço Prestado, sendo: 55: Serviço de Registro Civil das Pessoas Naturais	ffff (0003)	Número do livro
	dddd (1987) Ano do Registro	ggg (050)	Número da folha
DETALHAMENTO	e (1) Tipo do livro, sendo: 1: Livro A (Nascimento) 4: Livro C (Óbito) 2: Livro B (Casamento) 5: Livro C Auxiliar (Registro de Natimortos) 3: Livro B Auxiliar (Registro de casamento religioso para fins civis) 6: Livro D (Registro de Proclamas) 7: Livro E (Demais atos relativos os Registro Civil)	hhhhhhh (0000533)	Número do Termo
00188-3) Código Nacional da Serventia (identificação única do cartório)		ii (31)	Dígito Verificador
Código do Acervo, sendo: 01 - Acervo Próprio Outros - Acervos Incorporados			

clusivo para emissão de certidões de registro civil das pessoas naturais

BIRTH · NAISSANCE

Manitoba

BIRTH CERTIFICATE
CERTIFICAT DE NAISSANCE

Manitoba
VITAL STATISTICS
L'ÉTAT CIVIL

Certified extract from Registration of Birth filed at Winnipeg, Manitoba, Canada.
Extrait certifié conforme de l'enregistrement de naissance, Winnipeg, Manitoba, Canada.

Alana Lukes
Director / Directrice

Ver2008

Name
Nom OLIVEIRA ALVES
ERICK

Date of Birth
Date de naissance MAY 4, 2020

Sex
Sexe M

Place of Birth
Lieu de naissance WINNIPEG

Name of Parent
Nom du parent PEREIRA DA SILVA ALVES, GUILHERME

Name of Parent
Nom du parent RODRIGUES DE OLIVEIRA, RENATA

Registration No.
Nº d'enregistrement 2020-06-006642

Registration Date
Date d'enregistrement MAY 13, 2020

Date Issued
Délivré le AUG 27, 2020

MB0066636900

ENDORSEMENTS AND LIMITATIONS
This passport is valid for all countries unless otherwise specified. The bearer must comply with any visa or other entry regulations of the countries to be visited.

SEE OBSERVATIONS BEGINNING ON PAGE 5 (IF APPLICABLE)

MENTIONS ET RESTRICTIONS
Ce passeport est valable pour tous les pays, sauf indication contraire. Le titulaire doit se conformer aux formalités relatives aux visas ou aux autres formalités d'entrée des pays où il a l'intention de se rendre.

VOIR LES OBSERVATIONS DÉBUTANT À LA PAGE 5 (LE CAS ÉCHÉANT)

Signature of bearer - Signature du titulaire



AW190710

EPD681165

PASSPORT
PASSEPORT

CANADA



Type/Type: P
Issuing Country/Pays émetteur: CAN
Passport No./N° de passeport: AW190710

Surname/Nom
RODRIGUES DE OLIVEIRA ALVES

Given names/Prénoms
RENATA

Nationality/Nationalité
CANADIAN/CANADIENNE

Date of birth/Date de naissance
02 DEC /DÉC 87

Sex/Sexe: F
Place of birth/Lieu de naissance: GOIANIA BRA

Date of issue/Date de délivrance
21 DEC /DÉC 23

Date of expiry/Date d'expiration
21 DEC /DÉC 33

Issuing Authority/Autorité de délivrance
CALGARY SOUTH

EPD681165

P<CANRODRIGUES<DE<OLIVEIRA<ALVES<<RENATA<<<<

AW190710<4CAN8712024F3312212<<<<<<<<<<<<<<00

FW629253

Renata Rodrigues de Oliveira Alves

Assinatura do titular / Signature du titulaire
Bearer's signature / Firma del titular

Este passaporte deve ser assinado pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé par le titulaire, sauf en cas d'incapacité.

This passport must be signed, except where the bearer is unable to do so.

Este pasaporte debe ser firmado por el titular, salvo en caso de incapacidad.

REPÚBLICA FEDERATIVA DO BRASIL

PASSAPORTE
PASSPORT



TIPO / TYPE: P
PAÍS EMISSOR / ISSUING COUNTRY: BRA
PASSAPORTE Nº / PASSPORT No.: FW629253

SOBRENOME / SURNAME
RODRIGUES DE OLIVEIRA ALVES

NOME / GIVEN NAMES
RENATA

NACIONALIDADE / NATIONALITY
BRASILEIRO(A)

DATA DO NASCIMENTO / DATE OF BIRTH
02 DEZ/DEC 1987

IDENTIDADE Nº / PERSONAL No.

SEXO / SEX
F

NATURALIDADE / PLACE OF BIRTH
GOIÂNIA/GO

FILIAÇÃO / FILIATION
MARIA APARECIDA RODRIGUES OLIVEIRA

RUBENS DE OLIVEIRA

DATA DE EXPEDIÇÃO / DATE OF ISSUE
03 AGO/AUG 2018

AUTORIDADE / AUTHORITY
SR/DPF/GO

VALIDO ATÉ / DATE OF EXPIRY
02 AGO/AUG 2028

BRA

P<BRARODRIGUES<DE<OLIVEIRA<ALVES<<RENATA<<<<
FW629253<4BRA8712024F2808026<<<<<<<<<<<<<<00

Menor não alfabetizado
Illiterate minor

Assinatura do titular / *Signature du titulaire /*
Bearer's signature / Firma del titular

REPÚBLICA FEDERATIVA DO BRASIL

YF463356

Este passaporte deve ser assinado
pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé
par le titulaire, sauf en cas d'incapacité.

This passport must be signed,
except where the bearer is unable to do so.

Este pasaporte debe ser firmado
por el titular, salvo en caso de incapacidad.



REPÚBLICA FEDERATIVA DO BRASIL

PASSAPORTE
PASSPORT

TIPO / *TYPE*
PP

PAÍS EMISSOR / *ISSUING COUNTRY*
BRA

PASSAPORTE Nº / *PASSPORT No.*
YF463356

SOBRENOME / *SURNAME*
OLIVEIRA ALVES



NOME / *GIVEN NAMES*
ETHAN

NACIONALIDADE / *NATIONALITY*
BRASILEIRO(A)

DATA DE NASCIMENTO / *DATE OF BIRTH*
16 SET/SEP 2024

CPF / *PERSONAL NUMBER*
124310331-04

SEXO / *SEX*
M

NATURALIDADE / *PLACE OF BIRTH*
CALGARY - CAN

FILIAÇÃO / *FILIATION*
RENATA RODRIGUES DE OLIVEIRA ALVES

GUILHERME PEREIRA DA SILVA ALVES

O(A) TITULAR ESTÁ AUTORIZADO(A) PELOS RESPONSÁVEIS LEGAIS, PELO PRAZO DESTE DOCUMENTO, A VIAJAR COM APENAS UM DELES (RES. CNJ 131/11, ART. 13).

DATA DE EXPEDIÇÃO / *DATE OF ISSUE*
30 MAR/MAR 2026

AUTORIDADE / *AUTHORITY*
VANCOUVER CG

VÁLIDO ATÉ / *DATE OF EXPIRY*
29 MAR/MAR 2028

PPBRAOLIVEIRA<ALVES<<ETHAN<<<<<<<<<<<<<<<<<<<<
YF463356<4BRA2409168M2803294124310331O4<<<40

Menor não alfabetizado
Illiterate minor

REPÚBLICA FEDERATIVA DO BRASIL

Assinatura do titular / *Signature du titulaire / Bearer's signature / Firma del titular*

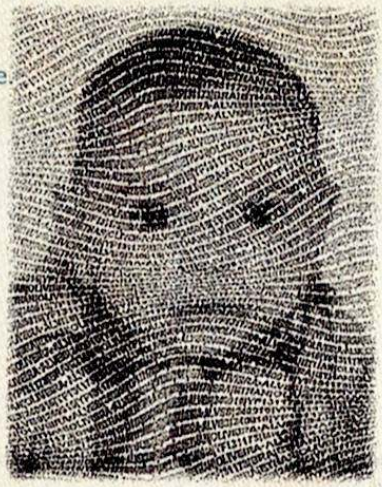
YF131173

Este passaporte deve ser assinado pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé par le titulaire, sauf en cas d'incapacité.

This passport must be signed, except where the bearer is unable to do so.

Este pasaporte debe ser firmado por el titular, salvo en caso de incapacidad.



REPÚBLICA FEDERATIVA DO BRASIL

PASSAPORTE
PASSPORT

TIPO / *TYPE*: **PP**

PAÍS EMISSOR / *ISSUING COUNTRY*: **BRA**

PASSAPORTE Nº / *PASSPORT No.*: **YF131173**

SOBRENOME / *SURNAME*
OLIVEIRA ALVES



NOME / *GIVEN NAMES*
ETHAN

NACIONALIDADE / *NATIONALITY*
BRASILEIRO(A)

DATA DE NASCIMENTO / *DATE OF BIRTH*: **16 SET/SEP 2024**

CPF / *PERSONAL NUMBER*: **124310331-04**

SEXO / *SEX*: **M**

NATURALIDADE / *PLACE OF BIRTH*: **CALGARY - CAN**

FILIAÇÃO / *FILIATION*
GUILHERME PEREIRA DA SILVA ALVES

RENATA RODRIGUES DE OLIVEIRA ALVES

O(A) TITULAR ESTÁ AUTORIZADO(A) PELOS RESPONSÁVEIS LEGAIS, PELO PRAZO DESTE DOCUMENTO, A VIAJAR COM APENAS UM DELES (RES. CNJ 131/11, ART. 13).

DATA DE EXPEDIÇÃO / *DATE OF ISSUE*: **28 FEV/FEB 2025**

AUTORIDADE / *AUTHORITY*: **VANCOUVER CG**

VÁLIDO ATÉ / *DATE OF EXPIRY*
27 FEV/FEB 2026

PPBRAOLIVEIRA<ALVES<<ETHAN<<<<<<<<<<<<<<<<<<<<
YF131173<7BRA2409168M2602279124310331O4<<<48

P 4 3 9 7 5 3 L S

Signature of bearer - Signature du titulaire

To be valid, this passport must be signed above by the bearer, unless the bearer is a child under the age of 16.

Pour être valide, ce passeport doit être signé ci-dessus par le titulaire, sauf si le titulaire est un enfant âgé de moins de 16 ans.

PASSPORT
PASSEPORT

CANADA



Type/Type
PP

Issuing Country/Pays émetteur
CAN

Passport No./N° de passeport
P439753LS

Surname/Nom
OLIVEIRA ALVES

Given names/Prénoms
ETHAN

Nationality/Nationalité
CANADIAN/CANADIENNE

Date of birth/Date de naissance
16 SEP/SEPT 2024

Sex/Sexe
M

Place of birth/Lieu de naissance
CALGARY CAN

Date of issue/Date de délivrance
18 FEB/FÉV 2025

Date of expiry/Date d'expiration
18 FEB/FÉV 2030

Authority/Autorité
CALGARY



PPCANOLIVEIRA<ALVES<<ETHAN<<<<<<<<<<<<<<<<<<<<

P439753LS1CAN2409168M3002186<<<<<<<<<<<<<<04

Menor não alfabetizado
Illiterate minor

Assinatura do titular / Signature du titulaire
Bearer's signature / Firma del titular

YE773852

Este passaporte deve ser assinado pelo titular, salvo em caso de incapacidade.

Ce passeport doit être signé par le titulaire, sauf en cas d'incapacité.

This passport must be signed, except where the bearer is unable to do so.

Este pasaporte debe ser firmado por el titular, salvo en caso de incapacidad.

PASSAPORTE
PASSPORT

REPÚBLICA FEDERATIVA DO BRASIL

TIPO / TYPE
PP

PAÍS EMISSOR / ISSUING COUNTRY
BRA

PASSAPORTE Nº / PASSPORT No.
YE773852

SOBRENOME / SURNAME
OLIVEIRA ALVES

NOME / GIVEN NAMES
ERICK

NACIONALIDADE / NATIONALITY
BRASILEIRO

DATA DE NASCIMENTO / DATE OF BIRTH
04 MAI/MAY 2020

IDENTIDADE Nº / PERSONAL No.

SEXO / SEX
M

NATURALIDADE / PLACE OF BIRTH
WINNIPEG, CANADÁ

DATA DE EXPEDIÇÃO / DATE OF ISSUE
04 ABR/APR 2024

AUTORIDADE / AUTHORITY
VANCOUVER CG

VÁLIDO ATÉ / DATE OF EXPIRY
03 ABR/APR 2028



PPBRAOLIVEIRA<ALVES<<ERICK<<<<<<<<<<<<<<<<<<<<

YE773852<4BRA2005043M2804039<<<<<<<<<<<<<<00

ENDORSEMENTS AND LIMITATIONS
This passport is valid for all countries unless otherwise specified. The bearer must comply with any visa or other entry regulations of the countries to be visited.

SEE OBSERVATIONS BEGINNING ON PAGE 5 (IF APPLICABLE)

MENTIONS ET RESTRICTIONS
Ce passeport est valable pour tous les pays, sauf indication contraire. Le titulaire doit se conformer aux formalités relatives aux visas ou aux autres formalités d'entrée des pays où il a l'intention de se rendre.

VOIR LES OBSERVATIONS DÉBUTANT À LA PAGE 5 (LE CAS ÉCHÉANT)

Signature of bearer - Signature du titulaire



AL962567

ELY946722

PASSPORT
PASSEPORT

CANADA



Type/Type: P
Issuing Country/Pays émetteur: CAN
Passport No./N° de passeport: AL962567

Surname/Nom
OLIVEIRA ALVES

Given names/Prénoms
ERICK

Nationality/Nationalité
CANADIAN/CANADIENNE

Date of birth/Date de naissance
04 MAY /MAI 20

Sex/Sexe: M
Place of birth/Lieu de naissance: WINNIPEG CAN

Date of issue/Date de délivrance
14 OCT /OCT 20

Date of expiry/Date d'expiration
14 OCT /OCT 25

Issuing Authority/Autorité de délivrance
EDMONTON

ELY946722

P<CANOLIVEIRA<ALVES<<ERICK<<<<<<<<<<<<<<<<<<<<

AL962567<8CAN2005043M2510147<<<<<<<<<<<<<<08

3

P447909LS

Signature of bearer - Signature du titulaire

To be valid, this passport must be signed above by the bearer, unless the bearer is a child under the age of 16.

Pour être valide, ce passeport doit être signé ci-dessus par le titulaire, sauf si le titulaire est un enfant âgé de moins de 16 ans.

PASSPORT
PASSEPORT

CANADA



Type/Type
PP

Issuing Country/Pays émetteur
CAN

Passport No./N° de passeport
P447909LS

Surname/Nom
OLIVEIRA ALVES

Given names/Prénoms
ERICK

Nationality/Nationalité
CANADIAN/CANADIENNE

Date of birth/Date de naissance
04 MAY/MAI 2020

Sex/Sexe
M

Place of birth/Lieu de naissance
WINNIPEG CAN

Date of issue/Date de délivrance
20 FEB/FÉV 2025

Date of expiry/Date d'expiration
20 FEB/FÉV 2030

Authority/Autorité
CALGARY



PPCANOLIVEIRA<ALVES<<ERICK<<<<<<<<<<<<<<<<<<<<

P447909LS1CAN2005043M3002201<<<<<<<<<<<<<<<06