César García

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EDUCATION

B.Sc. Software Engineering | University of Calgary

Calgary, AB
Expected graduation: June 2026

Engineering Scholarship: **Seymour Schulich Community Service & Entrepreneurial Entrance Award**

EXPERIENCE

Grupo Roble
Software Engineer Intern

La Libertad, El Salvador
May 2025 - August 2025

- Led development of an **ASP.NET MVC (C#)** administrative portal adopted by **5+ operations teams** across Central America, improving reporting efficiency by **40%**
- Built internal automation tools using Power Apps, reducing manual processing time by **20%**
- Designed and integrated SQL Server database systems to support **real-time reporting** and secure data management
- Partnered with business and systems leadership to translate operational needs into scalable technical solutions

Canadian Sport Institute Alberta
Software Engineering Researcher

Calgary, AB
Sept 2025 - April 2026

- Engineered a **markerless motion capture system** to analyze elite athlete biomechanics in outdoor performance testing environments
- Developed computer vision and signal processing pipelines to estimate joint kinematics; achieved **85% correlation** with industry-standard motion capture systems
- Built data processing and validation workflows to compare sensor outputs with professional-grade hardware
- Presented technical findings, system limitations, and hardware integration recommendations to industry sponsor stakeholders

TBox
Software Engineer Intern

San Salvador, El Salvador
May 2024 - August 2024

- Collaborated within a team of 5 engineers to troubleshoot deployment issues, improving stability and usability
- Conducted end-to-end software testing and QA documentation for 8 modules, reducing defects by **30%**
- Prepared and presented product demonstrations to internal and external users, providing feedback to clients and the development team

PROJECTS

Markerless Motion Capture Validation & Analysis | Python, MediaPipe, OpenCV, SciPy

- Engineered a high-fidelity **markerless motion capture system** for biomechanical analysis of elite athletes, achieving **85% correlation** with gold-standard marker-based systems for sagittal-plane kinematics
- Implemented advanced signal processing pipeline with Kalman filtering and Butterworth smoothing (6Hz cutoff) to extract 3D joint angles from 2D video, processing **1000+ frames with <5° RMSE**
- Authored 15-page technical report documenting system architecture and validation methodology; presented findings to industry sponsor with visual proof of 2D→3D constraints

RateMyDino |Python, JavaScript, NextJS

- Built a full-stack professor review app for University of Calgary students leveraging RateMyProfessor data
- Coordinated tasks within a 6-member team, ensuring on-time delivery of backend, frontend, and QA
- Collaborated with engineers to develop backend services, perform prompt engineering, and write unit tests with Pytest; improved system reliability by **15%**
- Authored comprehensive technical documentation and coordinated feature prioritization within the development team

Football Match Classification ML Model Exploration | Python, Linear Regression, Gradient Boosted Regression, Neural Networks, NumPy, Matplotlib, Pandas, Jupyter Notebook, Microsoft Excel

- Engineered and evaluated **3+ predictive ML** models to classify 1,000+ football matches as Win/Draw/Loss with up to **80% accuracy**.
- Cleaned CSV datasets with **20+ features** using NumPy and Pandas; applied normalization, one-hot encoding, and feature selection.
- Visualized model performance using confusion matrices and loss curves, **reducing model bias by 15%** through hyperparameter tuning.

TECHNICAL SKILLS

Languages: C/C++, C#, Python, Java, JavaScript, TypeScript, SQL, HTML, CSS,

Technologies: Git, MySQL, Bash, Flask, React, Next.js, Vite, Tailwind, SSMS, Power Automate, Selenium, Docker, ASP.NET

Concepts/Systems: OOP, MVC, Agile, Unit Testing (Pytest), Regression Testing, RISC-V ASL, Data Pipelines