Esteban Zavala

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EDUCATION

The University of Texas at The Rio Grande Valley Expected Graduation: May 2026
Bachelor of Science in Computer Science Major GPA: 3.69
Coursework: Intro to Computer Science, Computer Science 1/2, Computer Organization & Assembly Language, Programming in Unix/Linux, Math Foundations of Computer Science, Software Engineering 1, Data Structures and Algorithms.

TECHNICAL SKILLS

Technical Languages: Python, Java, C++, HTML/CSS, JavaScript, React, Typescript, Axios.
Languages: Native in Spanish
Developer Tools: Git, Vs Code, CMake, Raspberry Pi 5, Macs, Linux, Postman, GraphGL.

WORK EXPERIENCE

The University of Texas at Rio Grande Valley **Edinburg, Texas**
Teaching Assistant January 2023 – Present

- Conducted 19 hours of weekly office hours, tutoring over 32 students in CS1/CS2 per week on their C++ assignments/projects, resulting in a 35% increase in students' grades.
- Delivered insightful concept reviews on arrays, classes, objects, and data structures for CS1/CS2, helping students retain information. As a result, 40 out of 45 students (89%) successfully passed their exams.
- Graded 150 assignments weekly, providing detailed feedback that led to a 35% improvement in student performance and provided professors with students earning progression.

Liberty Mutual Insurance **Plano, Texas**
TechStart Intern June 2024 – August 2024

- Frontend development on a new application for the billing solutions team, used by internal employees to access billing records of customers.
- Engineered dashboard, and search functionality, using React, Typescript, GraphGL and CSS, reducing billing information access time by 40%.
- Collaborated with backend developers, integrating 3 Restful APIs with Axios and GraphGL, resulting in real-time customer billing data synchronization and a 25% decrease in data retrieval time.

IEEE Robotics **Brownsville, Texas**
Software Developer December 2023 – May 2024

- Collaborated with a team of software developers at the University of Texas Rio Grande Valley to create task-specific software for robots. Met daily to design, implement, and test algorithms for various robotic challenges. Utilizing C++, CMAKE, and embedded software.
- Led the vision production for the robots, by researching how lights affect a robot's vision in different environments and testing code for the Computer Vision Software, improving object recognition. Resulting in refined algorithms showing a 30% increase in accuracy for identifying and distinguishing objects under challenging lighting situations.
- Met with the software development team to assemble and integrate each developer's code for the final production of robots. Our efforts resulted in the creation of a unified codebase that significantly enhanced the maintainability and scalability of the robot's software systems.

PROJECTS

Centralizing Reports | Figma | ReactJS | JavaScript | Axios | PowerBi REST API | Query Datasets | NEXT.js

- Built and deployed a fully-featured, responsive internal web application for employees to access reports efficiently, with direct report search, built-in reports access, and more.
- Utilized a query dataset to obtain data from Power BI, performed REST API calls through Postman, and displayed over 350 consolidated reports in a data table, reducing employee report access time by 25%, significantly improving operational efficiency.
- Leveraged Next.js server-side rendering and API routes for efficient data handling, resulting in a 30% faster data retrieval. This optimization enabled real-time access to PowerBI reports, improving overall efficiency in report centralization.

IEEE R5 Robotics Computer Vision Software | OpenCV | C++ | Raspberry Pi 5 | CMake

- Programmed a color-based robot configuration system using HSV values, optimizing color storage by mapping color initials to their corresponding HSV values through an unordered map and array structure. Improving both efficiency and clarity in handling color data by 70%.
- The robot detected colors using the OpenCV software, switching colors automatically by reading signals off an ultrasonic sensor, resulting in a robot that calculates a range of colors, with an 85% accuracy rate in the proper conditions.

LEADERSHIP

IEEE Brownsville Student Branch **Brownsville, Texas**
Leader *August 2024-Present*

- Volunteered for the student organization to raise funds for events, presentations, projects for students, resulting in raising $10,000 in funds.
- Delivered workshops twice a week, for students to improve their technical skills in C++, such as coding habits, debugging code, testing code, preparing students for real world software experience experience.

Latinx Student Leadership Summit, Google **Austin, Texas**
Leader April 2023 – May 2023

- Participated in a 2-day summit, one of 50 students selected out of 1200+ hosted by Google, representing the Latinx community in tech.
- Engaged in technical workshops with senior software engineers, learning about the technical interview process.