

Alejandro Castillo

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EDUCATION

California State University, Northridge

Bachelor of Science in Computer Science

Northridge, CA

Aug. 2023 – Dec. 2025

University of California, Riverside

Computer Science

Riverside, CA

Sep. 2021 – May 2023

PROJECTS

Sentinel — IoT Air Quality Monitoring System | C, ESP

Apr. 2026 – June 2026

- Engineered end-to-end IoT system on ESP32 WROVER using native ESP-IDF and C
- Implemented bit-bang GPIO driver for DHT22 temperature/humidity sensor and I2C driver with CRC8 verification for SGP30 air quality sensor, including cross-sensor humidity compensation for improved TVOC accuracy
- Designed 3-task FreeRTOS pipeline with mutex-protected queues for sensor acquisition, EMA-based signal smoothing, and TLS MQTT publishing, achieving reliable 1Hz sensor sampling with zero data loss
- Built Node.js/TypeScript backend with MQTT subscriber, SQLite persistence, and REST API; deployed on Render with automated CI/CD from GitHub

Pong | C++, SFML

July 2024

- Built a 2D Pong game in C++ using the SFML graphics library, implementing a finite state machine architecture to manage distinct game states (splash screen, menu, gameplay, end state)
- Designed object-oriented game entities (Ball, Paddle, Enemy) with encapsulated update/render logic, decoupling entity behavior from the core game loop

EXPERIENCE

Freelance Web Developer

May. 2026 – Present

Self Employed

Remote

- Designed and deployed a production marketing website for Hotsman Construction, a local contracting business, using Next.js, TypeScript, and Tailwind CSS
- Configured custom domain, DNS, and hosting deployment pipeline via Vercel
- Implemented booking integration, contact workflows, and WCAG accessibility improvements based on client feedback

Receiving/Sales Associate

Apr. 2021 – Present

Home Depot

San Fernando, CA

- Assist customers in selecting appropriate rental equipment and tools based on project requirements
- Created rental contracts, explained terms and safety procedures, and ensured compliance with company policies
- Processed rental returns, assessed equipment condition, and documented damages or maintenance needs
- Coordinated inbound deliveries with vendors and transportation partners to maintain inventory flow
- Maintained receiving documentation and inventory records to support efficient warehouse operations

AI Trainer

Dec. 2025 – May 2026

Handshake

Remote

- Helped improve AI accuracy across audio, visual, and text tasks

Robotics Instructor

Mar. 2024 – Apr. 2024

Whizara

Sun Valley, CA

- Taught students coding and problem-solving skills using a hands-on approach, including the innovative use of LEGO steps to help visualize and break down complex programming concepts
- Encouraged students to build and understand coding structures in a fun and engaging way, providing them with a solid foundation in programming

TECHNICAL SKILLS

Languages: Python, C/C++, SQL, JavaScript, HTML/CSS

Frameworks: React, Node.js

Developer Tools: Git, ESP-IDF, VS Code, Visual Studio, PlatformIO

Libraries: pandas, NumPy, SFML