

# Joseph Ignacio Guzman

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## Professional Summary

Computer Engineering graduate with hands-on experience in embedded hardware assembly, physical prototyping, additive manufacturing and system integration. Specializing in embedded systems, firmware development, and hardware-software integration testing. Proven track record designing and delivering robust, low-level embedded solutions with hands-on experience in ARM Cortex microcontrollers, real-time operating systems (RTOS), and communication protocols. Proficient in programming, system architecture, and cross-platform compatibility, combined with a problem-solving and future-proofing mindset.

## Projects

**Dr. Pill** · C, Python | STM32CubeIDE | Shapr3D

Sept 2024 - May 2025

- Led embedded firmware development for an automated pill dispensing system tasked with delivering precise medication doses reliably. Developed and calibrated robust motor driver algorithms on STM32 microcontroller, ensuring seamless data exchange and reliable operation of multi-component subsystems.

**I2C Network Communication** · C | Keil uVision

Nov 2024

- Developed embedded firmware integrating multiple I<sup>2</sup>C devices of TCS34725 color sensor, MPU6050 gyroscope/accelerometer, and a 16x2 I<sup>2</sup>C LCD display on a TM4C123GXL microcontroller to enable real-time sensor data acquisition and system status feedback.

**Weather Quest** · C | Keil uVision

Oct 2024

- Implemented embedded firmware on TM4C123GXL microcontroller with Wi-Fi Booster Pack to autonomously fetch, parse, and display JSON weather data from OpenWeather API.

**Bluetooth Controlled Car** · C | Keil uVision

- Built and integrated an RC vehicle chassis with TM4C123GXL controller and HC-05 Bluetooth module; installed PWM motor drivers, connected wiring harnesses, mounted sensors, and performed mechanical-electrical system integration.

## Education

**California State University, Long Beach**

B.S. in Computer Engineering

May 2025

ABET Accredited

## Work Experience

**Mach Industries**

Nov 2025 - Present

Avionics Integration Technician (Contractor)

Huntington Beach, CA

- Assemble avionics components and wire harnesses into vehicles, supporting build systems through precise integration and rework assistance.
- Refine work instructions and increase subprocess efficiency via cross-training in hardware integration, including PCB bring-up, functional verification, and test data collection.
- Provide engineer feedback on vehicle troubleshooting and process improvements, enhancing production readiness and operational workflows.

**Tastea - Long Beach Exchange Retail**

June 2020 - June 2022

Team Lead Supervisor

Long Beach, CA

- Supervised daily team operations in a fast-paced retail environment, ensuring product quality and compliance with strict service and safety standards, which contributed to maintaining a 95% customer satisfaction rate.
- Conducted performance evaluations and delivered constructive feedback, collaborating with management on training initiatives that enhanced staff productivity and team efficiency.

## Technical Skills

- Use of hand tools: screwdrivers, wrenches, wire cutters, pliers, soldering iron, electric drills, vice holders.
- PCB Assembly, soldering and wire harnessing
- Multimeter measurement, signal validation, and troubleshooting
- Embedded system bring-up & installation
- Electro-mechanical prototyping
- Hardware integration & validation

