Joseph Ignacio Guzman

PROFESSIONAL SUMMARY

Motivated and detail-oriented Computer Engineering graduate from California State University, Long Beach, with practical experience in embedded systems design, software development, and hardware-software integration. Skilled at tackling complex real-world challenges and quickly adapting to new tools and technologies. Demonstrated leadership in team projects and holds a passion for fields such as the space industry and healthcare through ongoing personal projects. Eager to contribute technical expertise and a growth mindset to innovative and collaborative environments.

PROJECT EXPERIENCE

Exoplanet Discovery | Ongoing Independent Research August 2025 - Present

- Conducting independent research on exoplanet detection methods and transit pipelines using public NASA datasets.
- Investigating implementation options for real-time processing on embedded platforms (ESP32/STM32 microcontrollers).
- Gaining experience in astronomical data analysis, embedded control systems, and feasibility assessment for TinyML deployment.

Brain Computer Interface | Ongoing Independent Research June 2025 - Present

- Researching user interface design and calibration strategies to streamline data acquisition
- Exploring alternative methods for acquiring EEG data, including open-source datasets and low-cost simulation tools, due to the high expense of commercial EEG hardware..
- Currently reading Change Your Brain, Change Your Life by Dr. Daniel Amen to enhance understanding of brain function and apply insights to brain-computer interface research.

Dr. Pill The Automated Pill Dispenser | C, Python, and Shapr3D September 2024 - May 2025

- Designed and implemented the pill dispensing mechanism, ensuring precise and reliable medication delivery.
- Developed and calibrated motor systems to optimize performance and accuracy of the dispenser.
- Engineered board-to-board communication protocols between STM32 microcontroller and Raspberry Pi for seamless hardware integration.
- Created detailed 3D designs and managed 3D printing processes to fabricate custom components for the device.
- Fine-tuned the Python-based GUI, implementing quality-of-life improvements to enhance user experience and interface responsiveness.

I2C Network Communication | *C and Keil uVision* November 2024

- Implemented a multi-device I2C network with TM4C123 as master, coordinating between TCS34725 color sensor, MPU6050 gyroscope, and 16x2 LCD, featuring PWM servo control.

Weather Quest | *C and Keil uVision* October 2024

- TM4C123GXL + Wi-Fi Booster Pack fetches weather data from OpenWeather API via HTTP. Parsed JSON (temperature/humidity) is displayed on ST7735 LCD and UART terminal.

Bluetooth Car | *C and Keil uVision* September - October 2024

- Implemented a dual-mode robotic system using TM4C123 and HC-05 Bluetooth, enabling wireless manual driving and pre-programmed autonomous navigation through PWM motor drivers, sensor feedback, and LED status indicators.

WORK EXPERIENCE

Tastea - Team Lead Supervisor

Long Beach Exchange Center June 2020 - June 2022

- Supervised team operations, maintained product quality, and ensured compliance with service standards
- Managed inventory and stock levels to optimize efficiency and reduce waste
- Delivered performance evaluations and suggestions to upper management to enhance staff productivity

CONTACT INFO

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Long Beach, CA

WEBSITES / PROFILES

- https://jibguzman.github.io/
- linkedin.com/in/josephguzmani

TECHNICAL SKILLS

- C
- C++
- Python
- MATLAB
- Verilog
- Java
- JavaScript
- SQL
- HTML
- Assembly
- STM32CubeIDE
- Vivado
- Keil uVision
- SolidWorks
- Shapr3D
- Git
- GitHub
- MySQL
- Linux
- VirtualBox
- Jupyter Notebook
- LTspice
- I2C
- UART
- SPI
- PWM
- Circuit Design
- Testing
- Calibration
- Troubleshooting
- Hardware Assembly
- Leadership
- Team Collaboration
- Project Coordination

EDUCATION

B.S. Computer Engineering
California State University, Long Beach
May 2025