ADRIÁN SILVA PALAFOX

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WEBSITES, PORTFOLIOS, PROFILES

GitHub | Portfolio | LinkedIn

RESUME

Electronics and Telecommunications Engineer focused on embedded software development for 8-bit and 32-bit microcontrollers, FPGAs, and embedded Linux systems . Experience with firmware architecture, RTOS programming, and resource optimization in constrained environments . Knowledgeable in industrial communication protocols and IoT technologies such as Modbus, CAN, MQTT, and LoRa . Committed to delivering reliable real-time solutions and supporting team development through technical collaboration and mentorship .

EDUCATION

Electronics And Telecoms Engineering: Electrical Engineering, 01/2026 **UNIVERSIDAD LA SALLE BAJÍO** – León, Guanajuato, Mexico

CERTIFICATIONS, TRAINING, HONORS & AWARDS

- **Member of Robotics Club** | 2024 – 2026
- **Precision Agriculture:** Instrumentation Hardware Design for Water Quality | Research Project
- **Machine Shop Tools & Operations Workshop** | IECA León, GTO | Feb 2022 – Mar 2022
- **Neural Networks Training** | IECA Online | Sep 2021 – Dec 2021
- **Academic Excellence Scholarship** | 2021 – 2026

SKILLS

- **Programming & HDL:** C/C++, Python, MATLAB/Octave, VHDL, Verilog.
- **Embedded & OS:** FreeRTOS, Yocto project (Basic), Buildroot (Basic), ROS/micro-ROS, GNU/Linux System Management.
- **Protocols & IoT:** UART, SPI, I2C, CAN, Modbus, MQTT, LoRa, Telegraf, InfluxDB, Firebase.
- **ECAD:** KiCad, Altium (basic), FreeCAD (basic)
- **Microcontrollers:** PSoC 5LP**,** STM32, ESP32, AVR, MSP430, RP2040.
- **FPGA:** Tang Nano 9K, Nexys A7.
- **Single Board Computers:** Raspberry 4-5, Radxa X4, Milk V.
- **Instrumentation & RF:** Logic Analyzer, Oscilloscope, Spectrum Analyzer, RTL-SDR Dongles, Signal Generator, GNU Radio.
- **Industrial & Tools:** PLC programming (Siemens S7-1200), Node-RED, LabVIEW.

EXPERIENCE

ULSB Technical Coach | 01/2024 – 09/2026 **Universidad De La Salle Bajío** – León, Guanajuato, Mexico

- Spearheaded the development of line-following and sumo robots using ATmega328P, STM32F103, and ESP32 microcontrollers, integrating nRF24L01+ PA+LNA modules for RF communication and implementing hybrid PID control algorithms with fuzzy logic.
- Orchestrated a ROS2 and GNU Radio ecosystem across high-performance nodes (Raspberry Pi 5, Radxa X4) and ESP32-based micro-ROS controllers, while standardizing development by training the team on Linux environments (Dual-boot, VM, Distrobox).

Embedded Systems Intern | 01/2025 – 09/2025 **INIBODROID** – León, Guanajuato, Mexico

- Engineered a distributed control architecture utilizing STM32F103 and ESP8266 microcontrollers to decouple real-time PID regulation from web user-interface tasks, enhancing reflow profiles through algorithmic implementation and Kalman filter design analysis using GNU-Octave .
- Developed a deterministic finite state machine and embedded web interface to ensure reliable process monitoring and control.
- Executed the complete electronic design and PCB layout using KiCad, optimizing component selection to meet limited budget requirements without compromising system reliability.

Research Intern | 08/2023 – 12/2023 **CIO** – León, Guanajuato, Mexico

- Collaborated under the supervision of Dr. Natiely Hernández Sebastián, assisting in the experimental setup and fabrication analysis of micro-coils.
- Acquired specialized training in microfabrication processes and safety protocols within cleanroom environments.
- Developed foundational skills in electromagnetic simulation by learning to operate COMSOL Multiphysics for model analysis.
- Analyzed scientific literature and prepared technical reports to document state-of-the-art methods.

Automation Intern | 09/2023 – 09/2023 **SMC** – León, Guanajuato, Mexico

- Engaged in the Bushido challenge to advance expertise in PLC ladder logic programming and the design of electro-pneumatic systems.

English and Math Tutor | 03/2020 – 09/2022 **Kumon** – León, Guanajuato, Mexico

- Tutored students in Mathematics and English, adapting teaching methods to individual learning speeds and tracking academic progress.

LANGUAGES

- **Spanish:** Native
- **English:** Upper intermediate (B2+)

HOBBIES

- Reading (fiction and technical blogs)
- Daily walkingwhile listenting to podcasts or music
- Horticulture and hydroponics
- Documenting academic and self-initiated project demonstrations on YouTube - TikTok and personal projects in embedded systems and applied mathematics.