

Alvaro Humberto Quiñonez Rodríguez

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EDUCATION

Sonora Institute of Technology
Master of Science in Engineering

Cd. Obregón, SON
February 2023

Sonora Institute of Technology
Bachelor in Mechatronics Engineering

Cd. Obregón, SON
June 2019

TECHNICAL SKILLS

- Git, MATLAB, Autodesk Eagle, Proteus, Arduino, Microsoft Office, Visual Studio Code, Latex.
- C, Python, C++ (beginner).
- Multimeter, Oscilloscope, Logic Analyzer.

PERSONAL SKILLS

- Teamwork.
- Fast Learner.
- Problem Solving.
- Adaptability.
- Analytic Capability
- Proactive Learning.

ACADEMIC PROJECTS

IoT Weather Station

Bachelor's Thesis

- ESP32 reading meteorological parameters from analog and I^2C sensors.
- Use of MQTT protocol to send data to a local broker (Raspberry Pi).
- Collect the data into a MySQL database and displayed on a website.

Smart Traffic Light System

Embedded RTOS final project

- Implement a series of tasks to determine in real time the status, number and distance between cars, and the temperature at a given traffic light with a ESP8266 and the FreeRTOS.
- Send data via MQTT and collected into a non-relational database.
- The end user must have the option to manually set the traffic light status.

Low-cost and Low-Power Air Quality and Weather Station

Masters Thesis

- MSP430FR5529LP periodically communicating with I^2C and UART sensors.
- Transfer the data via a LoRa transceiver module (SPI) to The Things Stack service then forwarded via MQTT to a local server on the Raspberry Pi.
- After the data transfer the MCU enters sleep mode and wakes up ten minutes later.

Programming Languages: C++, Python, JS, PHP & HTML/CCS.

Protocols/Standards: MQTT, I^2C , SPI, UART.

COURSES

- IoT Embedded System Design (ITSON).
- TALLER CONTROL DE VERSIONES CON Git y GitHub (UTMACH).
- Microcontroller Embedded C Programming: Absolute Beginners (Udemy).
- Advanced C Programming Course (Udemy).
- Beginning C++ Programming - From Beginner to Beyond (Udemy).
- Applied Analytics Using SAS Enterprise Miner (SAS).

Publications.....

Alvaro Humberto Quiñonez-Rodríguez, Ian Mateo Sosa-Tinoco, Erica Cecilia Ruiz-Ibarra, and Agustin Robles-Morua. Development of a low-cost and low-power air quality and weather monitoring system. Journal Urban-Rural and Regional Economy, pages 1–11, 6 2021.