

ALVARO HUMBERTO QUIÑONEZ RODRÍGUEZ



Responsible person seeking not only to acquire new knowledge and skills, but to demonstrate the ones I already have gained during my academic development.

CONTACT

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SKILLS

Development

C
Python
C++
HTML/CSS
Matlab



Operating Systems

Windows
Linux
FreeRTOS



Software & Tools

Microsoft Office
Data handling/analysis
(MySQL, MongoDB)
Git
Measuring Tools
(Oscilloscope, Multimeter)



Embedded Systems

Arduino/ESP32
Raspberry Pi
TI MSP430



Languages

Spanish (Native)
English



REFEREES

PhD Ian Mateo Sosa Tinoco

📍 Instituto Tecnológico de Sonora
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Engr. Germán Paredes Zazueta

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EDUCATION

📅 08/2014- 06/2019
📍 Instituto Tecnológico de Sonora

B.S in Mechatronics Engineering
(General Average: 85/100)

📅 09/2020- 10/2022 (Expected)
📍 Instituto Tecnológico de Sonora

M.S. in Engineering
(General Average: 95/100)

MASTER COURSES

IoT Software Ad Hoc Networks AI/Neural Networks
Analysis of Algorithms Embedded RTOS Discrete Math
Distributed Systems Interactive Systems Design Discrete Systems

PROJECTS

IoT Weather Station (Bachelor's Thesis). Based on ESP32 as a central unit and the MQTT protocol to send the sensors data to a Raspberry acting as a broker. The received data is collected into a relational database and finally deployed in a dynamic website.

Smart Traffic Light System. Developed on the ESP8226 and FreeRTOS, there were a series of tasks (and queues to communicate them) to determine: the traffic status, the number of cars in each traffic light and the temperature on it, the distance between cars and allowing the operator to change the status bidirectionally between green and red. The amount of traffic and temperature are sent through MQTT to store them in a non-relational database, then displayed on a website.

Low-cost and Low-Power Air Quality and Weather Station (Masters Thesis). The previous thesis is optimized by migrating to an ultra low power MCU and LoRaWAN for the transmission. Thus, not only the energy consumption is optimized but also the system security. The data is received on The Things Network service then forwarded via MQTT to a local server on the Raspberry Pi.

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

Protocols/Standards: I²C, SPI, MQTT.

ADDITIONAL TRAINING

- Course IoT- ITSON Embedded Systems (2019): Python, MySQL and MQTT integration.
- Microcontroller Embedded C Programming: Absolute Beginners.
- Advanced C Programming Course.
- Applied Analytics Using SAS Enterprise Miner.