

# M.SC.ENG. 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

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

### Languages

Spanish (Native) ●●●●●●  
English ●●●●●●

## REFEREES

### PhD Ian Mateo Sosa Tinoco

📍 Instituto Tecnológico de Sonora  
✉ erroba@gmail.com  
☎ +52 (644) 410-9000 Ext. 1782

### 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 to determine in real time the status, number and distance between cars, temperature, and to allow the operator to change the status.

**Low-cost and Low-Power Air Quality and Weather Station (Masters Thesis).** The previous thesis is optimized by migrating to an ultra-low power Texas Instruments 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:** I<sup>2</sup>C, SPI, MQTT.

## ADDITIONAL TRAINING

- 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).