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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Alvaro H. Quiñonez R.

SKILLS

Development

C
Python
Java
HTML/CSS

Operating Systems

Windows
Linux
FreeRTOS

Software & Tools

Microsoft Office
Data handling/analysis (MySQL, MongoDB)
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
erroba@gmail.com
+52 (644) 410-9000 Ext. 1782

PhD Erica Cecilia Ruiz Ibarra
Instituto Tecnológico de Sonora
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Engr. Germán Paredes Zazueta
Pinnacle Aerospace, Cd. Obregon
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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)

RECENT MASTER COURSES

IoT Software | Ad Hoc Networks | AI/Neural Networks | Algorithm Analysis | Discrete Math | Interactive Design | Embedded Systems and RTOS | Distributed Systems

RECENT PROJECTS

Design and implementation of a weather station based on IoT technology (Thesis): Development of an IoT device with an ESP8266 as a central unit, the MQTT protocol was used to transfer and save meteorological data through a Python code running in a Raspberry Py into a relational database, then deployed in the designed web site.

Traffic Monitoring System: Vehicles and traffic light tracking in real time, if a congestion is detected the operator can change the traffic light status, the driver receives a notificaction. The amount and type of material reported by the driver and each congestion are stored in a relational database so the manager can obtain a daily, weekly and montly report.

Smart Traffic Light System: developed on an ESP32 and FreeRTOS based, there are a series of task and queues to determine the status or change it, to tell the operator the traffic amount in the traffic light, to measure the temperature and distance between cars and allow the operator to change the status between green/red or red/green. The traffic amount and temperature are sended through MQTT to a Python code to store them in a non-relational database then displayed on a web site.

Development of a Low-cost and Low-Power Air Quality and Weather Monitoring System (Thesis): The previous work was optimized using a ultra low power MSP430F5529LP microcontroller and the LoRaWAN protocol to transmit the data, thus not only the energy consumption is optimized but also the system range. The data is receiveid in The Things Network service then forwarded via MQTT to a local server.

SKILLS

Teamwork | Adaptability | Analytic Capability | Problem Solving | Critical Thinking | Fast Learner

CERTIFICATES

- Course IoT- ITSON Embedded Systems (2019).
- Microcontroller Embedded C Programming: Absolute Beginners.
- Advanced C Programming Course.