JESUS MINJARES

El Paso, TX | (915) 269-2065 | jminjares4@miners.utep.edu | LinkedIn: JesusMinjares | GitHub: jminjares4

EDUCATION

Master of Science in Computer Engineering — **Expected:** May 2022
The University of Texas At El Paso (UTEP) — GPA: 3.86/4.0

Bachelor of Science in Electrical and Computer Engineering — GPA: 3.22/4.0
The University of Texas At El Paso (UTEP) — **Awarded:** Dec. 2020

TECHNICAL EXPERIENCE

Center For Aerospace and Exploration Technology Research (cSETR) — El Paso, TX
Graduate Research Assistant — Feb. 2022 – Present

- Develop a 3U CubeSat with a multidisciplinary team of 5 members, leveraging strong collaboration and multi-tasking to effectively meet deadlines
- Design, develop, implement, and test custom firmware various microcontrollers in C, C++, and Python
- Assist in designing custom drivers and hardware for space systems using Eagle
- Design API documentation for HAL drivers through Doxygen, provide proper software maintenance
- Test and debug hardware for different subsystems with an oscilloscope and function generator to verify functionality
- Utilize version control (git) to provide simultaneous work and keep track of all updates

Johns Hopkins University Applied Physics Laboratory (JHUAPL) — Laurel, MD
Wireless Cyber Capabilities (QKW) Intern (Secret Clearance) — May – Aug. 2021

- Developed and tested software at the physical layer using C, C++, and bash scripting to ensure highly reliable and efficient performance
- Assisted in a docker file for a custom environment to use gnuradio and optimized software development
- Developed algorithms for the IEEE802.11n protocol

TECHNICAL PROJECTS

Center For Aerospace and Exploration Technology Research (cSETR) — El Paso, TX
Robotic Arm 3U CubeSat Payload — Aug. 2021 – Present

- Design, develop, implement, and test 3U CubeSat payload firmware utilizing ARM Cortex M microcontrollers in real-time (FreeRTOS)
- Assist in a custom Hardware Abstraction Layer (HAL) driver API to reduce development effort for 6 CubeSat teams by establishing quick software deployment
- Assembled custom four-layer print circuit boards (PCB) designed in Eagle, utilizing proper testing procedures to verify functionality
- Implement payload communication through various protocols (CAN, I2C, UART, SPI) to communicate between CubeSats payloads

UTEP — El Paso, TX
Intelligent Portable Infrasound Array (IPIA) — Jan. – Dec. 2020

- Designed, developed, implemented, and tested custom embedded software in real-time (FreeRTOS) to meet latency constraints
- Read pressure sensor (DS-0091) at 100Hz, to avoid aliasing
- Built short-distance wireless communication via Bluetooth (HC-05 module) by sending packets through UART
- Designed custom GPS (SIM33EAU module) API by parsing serial data with NMEA protocol

SKILLS

- Bilingual in Spanish and English (written and oral)
- Extensive use of C, C++, ARM Cortex M4F microcontrollers, and Real-Time Operating System (FreeRTOS, TI RTOS)
- Proficient in Python, KiCad, EasyEDA, Eagle, and Git
- Familiar with Java, Rust, Multisim, and hardware testing (oscilloscope, function generator, multimeter)
- Basic knowledge of Docker, Verilog, and Assembly Language