JESUS MINJARES

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EDUCATION

Master of Science in Computer Engineering   **Expected: May 2022**
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**
UNIVERSITY OF TEXAS AT EL PASO (UTEP)   Fall 2020

TECHNICAL EXPERIENCE

CENTER FOR AEROSPACE AND EXPLORATION TECHNOLOGY RESEARCH (cSETR)   **El Paso, TX**
Graduate Research Assistant   Feb 2021-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

JOHN'S 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
- Member of ATLAS Summer Intern Program at JHUAPL

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 custom firmware in real-time (FreeRTOS) for ARM Cortex M4F microcontrollers for a 3U CubeSat payload
- Assist in a custom Hardware Abstraction Layer (HAL) driver API to reduce development effort for 6 CubeSat teams
- Assembled custom four-layer print circuit boards (PCB) designed in Eagle, utilizing proper testing procedures to verify functionality
- Implement payload communication between various protocols (CAN, I2C, and UART) to communicate to other CubeSats payloads

UNIVERSITY OF TEXAS AT EL PASO (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) to send data through UART; increased mobility for testing
- 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