JESUS MINJARES

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EDUCATION

UNIVERSITY OF TEXAS AT EL PASO — **El Paso, TX**
Master of Science in Computer Engineering — **GPA: 3.86/4.0**
Expected Graduation: May 2022

Bachelor of Science in Electrical and Computer Engineering — **GPA: 3.22/4.0**
Fall 2020

RELEVANT 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, 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 other 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 — **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

Computer

- Programming: C, C++, Java and Python
- Software: Multisim, EasyEDA, KiCad, EagleCAD, Git, and Docker
- Operating Systems: FreeRTOS, Windows, MacOS, Ubuntu 18.04, and Ubuntu 20.04
- IDE: Code Blocks, Code Composer Studio, Eclipse, Visual Studio Code
- Microcontrollers: MSP430G2553, MSP432P401R, TIVA C and ESP32

Instruments

- Oscilloscope, Function Generator, and Multimeter

Language

- Bilingual: Fluent in English and Spanish