JESUS MINJARES

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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. 2021 – Present

- Develop a 3U CubeSat with a multidisciplinary team of 5 members, leveraging strong collaboration and multi-tasking to meet deadlines
- Create custom firmware for 3 MCUs in C, C++, and Python
- Collaborate in designing custom drivers and hardware for space systems using Eagle
- Optimized API documentation through Doxygen to reduce software deployment by 15%
- Test and debug hardware for different subsystems with an oscilloscope and function generator to verify functionality
- Introduce 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 — May – Aug. 2021

- Developed and tested software at the physical layer using C, C++, and bash scripting to ensure highly reliable and efficient performance
- Redesigned docker file for a custom environment to use GNURadio and optimized software development by 20%
- Implemented algorithms for the IEEE802.11n protocol using C++ and OOP methodologies
- Addressed weekly meetings with 15 engineers to discuss on project progress

TECHNICAL PROJECTS

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

- Design 3U CubeSat payload firmware utilizing ARM Cortex M microcontrollers in real-time
- Deploy custom Hardware Abstraction Layer (HAL) driver API to reduce development effort of 6 teams by 30%
- Assemble custom four-layer print circuit boards (PCB) designed in Eagle, utilizing proper testing procedures to verify functionality
- Implement payload communication through communication protocols (CAN, I2C, UART, SPI) to communicate between CubeSats payloads

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

- Delivered custom embedded software in real-time (FreeRTOS) to meet latency constraints of 10 ms
- Established data acquisition of pressure sensor (DS-0091) at 80Hz using digital filter to avoid aliasing
- Built short-distance wireless communication via Bluetooth (HC-05 module) by sending packets through UART
- Integrated custom GPS (SIM33EAU module) API by parsing serial data with NMEA protocol to ensure scalability

SKILLS

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