

JESUS MINJARES

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EDUCATION

Master of Science in Computer Engineering
The University of Texas at El Paso (UTEP)

Expected: May 2022
GPA: 3.86/4.0

Bachelor of Science in Electrical and Computer Engineering
The University of Texas at El Paso (UTEP)

GPA: 3.22/4.0
Awarded: Dec. 2020

TECHNICAL EXPERIENCE

Center For Aerospace and Exploration Technology Research (cSETR)
Graduate Research Assistant

El Paso, TX

Feb. 2022 – 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)
Robotic Arm 3U CubeSat Payload

El Paso, TX

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