JESUS MINJARES

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EDUCATION

Master of Science in Computer Engineering — **Awarded:** May 2022
The University of Texas at El Paso (UTEP) — GPA: 3.81/4.0

Bachelor of Science in Electrical and Computer Engineering — **Awarded:** Dec. 2020
The University of Texas at El Paso (UTEP) — GPA: 3.23/4.0

Associate of Science in Electrical Engineering — **Awarded**: May 2018
El Paso Community College (EPCC) — GPA: 3.86/4.0

TECHNICAL EXPERIENCE

Sandia National Laboratories — Albuquerque, NM
Embedded Software Engineer — Nov. 2022 – Present

- Successfully executed Over-the-Air (OTA) firmware updates for a legacy system, significantly improving functionality and ensuring a stable deployment
- Implemented efficient CI/CD pipelines for streamlined deployment of embedded systems
- Enabled firmware compatibility by integrating new features onto existing boards
- Updated Makefile for dependable and risk-free embedded software development
- Enhanced embedded software with 14 new features, implementing Git for version control, issue tracking, and managing over 30 merge requests
- Acquired proficiency in SQLite3 and improved database performance by refactoring C/C++ software architecture

Aerospace Center (cSETR) — El Paso, TX
Graduate Research Assistant — Aug. 2021 – Jun. 2022

- Developed a 3U CubeSat with a multidisciplinary team of 5 members, leveraging strong collaboration and multi-tasking to meet deadlines
- Created firmware for 3 microcontrollers (MCUs) in C programming language
- Wrote python script to capture serial data and generate plots to analyze DC motor behavior
- Collaborated in designing custom hardware for space systems using Eagle
- Optimized API documentation through Doxygen to reduce software deployment by 15%
- Debugged subsystems with an oscilloscope, digital multimeter (DMM) and function generator to verify functionality
- Introduced version control (Git) to provide simultaneous work and keep track of all updates

Johns Hopkins University Applied Physics Laboratory (JHUAPL) — Laurel, MD
Software Engineer Summer 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
- Learned version control software (Git) to update and keep track of software changes

TECHNICAL PROJECTS

Aerospace Center (cSETR) — El Paso, TX
Robotic Arm 3U CubeSat — Aug. 2021 – Jun. 2022

- Designed 3U CubeSat payload firmware in C for ARM Cortex M microcontroller
- Deployed custom Hardware Abstraction Layer (HAL) API to reduce software development of 6 teams by 30%
- Populated custom 2-layer printed circuit boards (PCB) and ensured functionality with oscilloscope and DMM
- Implemented payload communication protocols (I2C, SPI, UART) 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 with digital filter to avoid aliasing
- Built short-distance wireless communication via Bluetooth (HC-05) by sending packets through UART
- Integrated custom GPS (SIM33EAU) API by parsing serial data with NMEA protocol
- Learned documentation system (Doxygen) to generate proper software documentation

SKILLS

- Fluent oral and written skills in Spanish and English
- Extensive use of C, C++, ARM Cortex M microcontrollers, and Real-Time Operating System (RTOS)
- Proficient in Python, KiCad, EasyEDA, Eagle, Git, Oscilloscope, CI/CD, DMM, SQLite3 and Doxygen
- Basic knowledge of Rust, Docker, and Verilog
- Familiar with Java, Multisim, and Assembly Language