# 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*** Dec 2020
The University of Texas at El Paso (UTEP) GPA: 3.22/4.0

## RELEVANT EXPERIENCE

**Graduate Research Assistant**
*Center for Space Exploration and Technology Research (cSETR)* Feb 2021-Present

- Develop a 3U CubeSat with a multidisciplinary team, leveraging strong collaboration and multi-tasking to effectively meet deadlines
- Deliver a custom electrical power system to power an onboard computer (OBC) with a lithium-ion battery charger (TP4056) with a boost converter (MT3608) to feed at most 3000 mA
- Improve Helmholtz coil controller by adding multiple drivers (MOSFET and h-bridge) to control magnetic field magnitude and direction

**Wireless Cyber Capabilities (QKW) Intern (SECRET CLEARANCE)**
*John's Hopkins University Applied Physics Laboratory (JHUAPL)* 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

## TECHNICAL PROJECTS

**Graduate Project**, *Center for Space Exploration and Technology Research* Aug 2021-Present

- Robotic Arm 3U CubeSat Payload
  - Design, develop, implement, and test custom firmware for TIVA C to control main payload
  - Assist in designing Hardware Abstraction Layer (HAL) drivers and custom print circuit board (PCB) using EagleCAD
  - Integrate wireless communication (Wi-Fi and Bluetooth) between payload and OBC (onboard computer) using an ESP32 through I2C to send packets

**Senior Design,** *University of Texas at El Paso* Jan 2020-Dec 2020

- Intelligent Portable Infrasound Array (IPIA)
  - Designed, developed, implemented, and tested custom embedded software in real-time (FreeRTOS) for MSP432P401R
  - Read pressure sensor (DS-0091) at 100 hertz and time stamp capture data
  - Created Bluetooth communication with HC-05 Module and sent the data between two MCUs
  - Designed custom GPS library for (SIM33EAU) module to capture data by serial communication

## 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