Adrian Meza

3 Ames St., Cambridge, MA | (619)-947-1072 | alm@mit.edu | MIT Department of Physics & EECS

Experience

Cybersecurity Group - Computer Science and Artificial Intelligence Lab **Cambridge, MA**
Undergraduate Researcher

- Mastered the most common memory unsafe exploits for low level computer programs through open-source cybersecurity exercises.
- Worked on an AI attack planning graph to analyze computer programs for vulnerabilities and map out possible attack routes.

MIT Center for Theoretical Physics **Cambridge, MA**
Dark Matter - Undergraduate Researcher

- Utilized a custom python library to create mock data to simulate potential sources of dark matter around or in the galactic center excess.
- Working to use machine learning to scan Kepler telescope data for potential sources of dark matter, using the simulated data as a training set

NASA Jet Propulsion Laboratory **Pasadena, CA**
Applied Electromagnetics Lab

- Wrote and implemented a custom simulation using Matlab to design and test an optical reflector for use in a novel Inter-Satellite Optical Communication device. The task involved working around constraints to optimize that amount of power we could collect at an Avalanche Photodiode Sensor (APD) from light coming in at various angles and to achieve a greater Signal to Noise Ratio.

NASA Jet Propulsion Laboratory **Pasadena, CA**
Space Sciences and Applied Electromagnetics Lab

- Analyzed possible novel methods for detecting Exoplanets in Extrasolar systems through modulations in Radio Frequency Emissions caused by interactions between solar radiation and the planet's magnetic field. The project involved using Fourier Analysis to test numerous scenarios that we could see upon observation of an Extrasolar system.

MIT Motorsports/Formula SAE Team **Cambridge, MA**
Electric Engineering Division

- Designing and implementing printed circuit boards, using Altium, to implement safety systems for a built-from-scratch electric motorsports vehicle (built according to the standards of the Formula SAE program). I'm currently focusing on the dashboard of the car; taking in warning signals for the High and Low Voltage power sources and notifying the driver.

Mustang Robotics **San Diego, CA**
President; Robot Construction/Design & Modeling

- Oversaw the organization of fundraisers essential to supporting 5 teams, each responsible for designing, building, and programming their own robot (each bot can cost upwards of $750).
- Used SolidWorks to create an assembly model of the robot based off of these ideas that we would later build off of in real life.
- Mentored kids from our local middle schools in everything from programming, to coming up with designs and implementing them using Computer Aided Design, to actual building.

University of California, San Diego Center for Astrophysics and Space Sciences **San Diego, CA**
Assistant Data Analyst

- Used python code to collect data from a polarization calibrator, in order that we may unearth and correct for any errors or outside 'noise' that interfered with our microwave emitter.

Leadership

MIT Physics Department **Cambridge, MA**

Organizer

- Collaborated with MIT Physics Department and a few other Undergraduates to organize a Physics Values Statement that outlines the Physics Community's commitment to ensuring that well-being, respect, inclusion, collaboration and mentorship are imperatives in our day to day interactions as students and Faculty.

Baja Missions **San Quintin, Mexico**

Lead Translator

- Part of a team of translators under an organization called Baja Missions, which provides medical services, daily bible classes, and community events for a week to impoverished areas of Baja California. I ensure communication proceeds as smoothly as possible where most needed, directing translators to specific groups they are to help during the week. I translate mainly for the optical department, and have grown skilled in the use of auto refractors to measure people's eye prescriptions; as well as to check for near or farsightedness through the use of eye charts.

City of Children Orphanage Backpack/School Supplies Drive **Ensenada, Mexico**

Founder

- I began this drive with my mother five years ago, and have been running it every year since then. Money is raised through donations and local fundraising events. Used towards: purchasing the necessary amount of backpacks and respective school supplies. As the program grows, the excess money has gone to purchasing shoes and/or jackets for the 86 kids at the orphanage, and towards buying lunch/snacks for the kids on the day we deliver the supplies, as well as towards a fun day of activities such as arts and crafts.

Other Qualifications

Programming Languages

- Python, C/C++, Java, Assembly, Matlab
    - Pytorch, Tensorflow libraries

Software

- Experienced with SolidWorks, Altium PCB Design

Languages

- Fluent in Spanish and English (read, write, speak); knowledgeable in Japanese (read, short conversation)