

Adrian Meza

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Qualifications

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). Fundraising was accomplished through student organized events with local businesses, solicitation to family & friends, donations, and selling concessions after school.
- Responsible for organizing the ideas formed through team discussion, aiming for certain goals the robot must achieve, and using SolidWorks to create an assembly model of the robot based off of these ideas that we would later build off of in real life.
- I was one of the team's main builders, and worked extensively with designing and implementing gear-based lifting systems, 4-6 wheel motorized base drives, pneumatics systems, launchers, and claw-contraptions as needed to complete various obstacles in the competitions.
- My team's robot was a VEX California State Championships Finalist in 2015, and subsequent VEX World Championship qualifier; VEX California State Quarter-Finalist 2016.
- As a team we 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

- Worked for approximately 1 & 1/2 months as an assistant data analyst for a millimeter-wave polarization calibrator project at the university, under one of the postdoctoral researchers. The project involved using 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.

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.

Otay Ranch High School Chess Club & Speed-Cubing Club**San Diego, CA***President & Founder*

- Successfully organized fundraisers at some of our school's festivals to raise over \$200 to fund the purchase of 10 new chess sets, and 30 new Rubik's cubes.
- Dedicate most of my school lunches to teaching students how to solve Rubik's cubes, with our goal being under to solve under a minute; as well as teaching students how to play chess through one on one sessions, a system of cycling learners to play with experienced and other inexperienced players, and weekly tournaments (both in school and between schools).

Church of Christ Vacation Bible School**San Diego, CA***Mentor*

- For four years I led a group of 5-6 elementary school students through various Bible themed activities and lessons at my local church's vacation bible school so that they would grow spiritually and learn about God in a fun and interactive way.

Education/Additional Qualifications**Otay Ranch High School San Diego, CA**

- Experienced with SolidWorks, Altium PCB Design, Python, and Matlab.
- Treasurer of Japanese Culture Club, and National Honors Society; Academic Decathlon Honors Captain.
- Fluent in Spanish and English (read, write, speak); knowledgeable in Japanese (read, short conversation)