

ROHAN PATEL

Los Angeles, CA | U.S. Citizen | Interested in Space Mission Design and Navigation

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EDUCATION

California State Polytechnic University, Pomona

Expected
12/2020

B.S. Aerospace Engineering | GPA: 3.24 (3.51 Aerospace Engineering Core)

Relevant Coursework: Orbital Mechanics, Space Vehicle Design, Spaceflight Dynamics and Control, Space Environment, Systems Engineering, Project Management, Dynamics and Vibrations

EXPERIENCE

Jet Propulsion Laboratory | Pasadena, California

Mission Design and Navigation (MDNav) Section 392K Intern

- Assisting the MDNav group by helping to develop a new visualization application for maneuver design
- Learning about Europa Clipper maneuver design and flight path control with MONTE (JPL inhouse tool)

10/2019-
12/2019

Cal Poly Pomona | Pomona, California

Researcher

- Learned about low thrust trajectory design with JPL's Mission Analysis of Low Thrust Trajectories (MALTO)
- Wrote a user's guide, helped test, and implement MALTO into the undergraduate orbital mechanics course

02/2019-
12/2019

AeroVironment | Simi Valley, California

GNC/Aeromechanical Engineering Intern

- Worked on proof of concept UAV navigation algorithms for efficient flight plan generation
- Involved with concept of operations, multidisciplinary design optimization, and performance estimations

06/2019-
08/2019

PROJECT EXPERIENCE

Capstone Project

Researcher | Reinforced Learning for Trajectory Design

- Exploring reinforcement learning applications in trajectory design for date and flyby selection
- Learning about the different optimization methods such as the Monte Carlo Tree Search process

09/2019-
Present

Space Vehicle Design Course (ARO4811)

Mission Design Lead | Proposal for an Interstellar Observation Platform (Voyager III)

- Leading the spacecraft trajectory design process using MALTO, GMAT, and developed MATLAB code
- Involved in systems engineering and the design of a JPL proposed solar gravity lensing telescope spacecraft

09/2019-
Present

Liquid Rocket Laboratory (LRL)

Aerodynamics Team Member | Launch Vehicle Team

- Developing flight trajectory, passive stability, and vehicle performance MATLAB code
- Integrating Missile DATCOM and CFD results to analyze vehicle aerodynamics

05/2018-
06/2019

Undergraduate Missiles Ballistics and Rocketry Association (UMBRA)

Aerodynamics Team Lead | FAR 1030 Competition (1st Place 2019)

- Worked on design and used CFD along with high speed aerodynamics to evaluate flow and pressures
- Evaluated flight trajectory and taught team members how to use a few high powered rocketry programs

09/2018-
06/2019

Orbital Mechanics Course (ARO309)

Team Lead | Kinetic Impactor Space Mission Design

- Led team to design a kinetic impactor mission with launch vehicle limitations
- Created an iterative Lambert arc solver for the trajectory in MATLAB and used FreeFlyer for data collection

01/2018-
03/2018

SKILLS

FAA Private Pilot License with over 130 hours flying Cessna 152 and 172 aircraft.

Languages: MATLAB, Python, UNIX Commands

Programs/Toolkits: SolidWorks, Missile DATCOM, STK (learning), NASA GMAT, MALTO, MONTE (learning), NAIF SPICE