Brit Wylie

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Engineering student interested in robotics, sustainability, and aerospace seeking year-round internship. Experience in CAD, FEA, MATLAB, Python, and manufacturing.

Education:

California Institute of Technology (Caltech)
Sept 2017 - June 2022
B.S. in Mechanical Engineering with Aerospace Minor

Coursework: **Introduction to Materials Science, Intro Computer Programming in Python, Intro Programming Methods in C++, Waves, Quantum Mechanics, Thermal Science** (Thermodynamics and Fluid Mechanics)**, Mechanics** (Statics, Dynamics, and Mechanics of Materials)**, CNC Machining, Introduction to Mechanical Design** (ME 14)**, Introduction to Multidisciplinary Systems Engineering, Space Engineering** (AE105)**, Experiments and Modelling in Mechanical Engineering** (FEA, Fluent, DIC)

Professional Experience:

Caltech Hypersonics Group
June - August 2020
Class of '52 60th Reunion SURF Fellow

- Develop MATLAB code to analyze frequency and detect features in SBLI Schlieren images

WET
June - September 2019
Production & Design Engineering Intern

- Refined and documented cleaning procedure for several metals
- Collaborated with graphics designers to prototype an early-stage idea
- Designed and built an image processing test setup to outperform commercial setups

NASA JPL Internship Programs
June - August, October - December 2018
Robotics Intern, JPLSIP & JPLYIP

- Systems-level and trade study analysis of early-stage robotics and satellite projects
- Spearheaded the design, control algorithms, and documentation of a vibration test setup

Project Experience:

Drive-o-copter Autonomous Robot Design and Simulation
Fall 2019 - Spring 2020
Front drivetrain design, ROS and Gazebo simulation

Spacecraft GNC Team, AE105
Spring 2020
MATLAB formation spacecraft trajectory simulation and preliminary hardware selection

Propulsion and Rocket Systems Engineering at Caltech
September 2017 - current (PARSEC)
Designed and analyzed a custom combustion chamber for a LOx-methane rocket to utilize metal 3D printing technologies, carbon fiber setup for nose cone, launch mechanism design

Self-Balancing Spool Robot (SpOt), ME14
May - June 2019
Analyzed system dynamics, set up PID control, produced drawings for, and helped manufacture a robot under a budget of $200 in three weeks with a team of four.

Transmission Design Project, ME14
April - May 2019
Machined and assembled several components of a metal, precision-machined gear transmission optimized for power and speed under a budget of $175 in two weeks with a team of four.

MakeMIT Hardware Hackathon, 2nd place
March 2019
Designed motor mount and feed system for an image detection ball shooter.

Skills:

CAD/CAM: Solidworks, HSMWorks
Simulation: Solidworks, ANSYS Fluent & FEA, MATLAB, Python, C++, ROS
Machining: CNC, mill, lathe, waterjet, drill press, bandsaw, laser cutter
3D printing: SLS, FDM, design for DMLS
Leadership: Thermodynamics and Fluid Mechanics TA, PARSEC ExComm, House Stewardship Committee