

TREY FORTMULLER

EDUCATION

UC Berkeley College of Engineering
Bachelor of Science (BS), Engineering Physics

Anticipated Graduation
May 2019

WORK EXPERIENCE

Engineering Intern – NASA Jet Propulsion Laboratory

May 2018 – Aug 2018

Robotic Systems Estimation, Decision, and Control Group

- Developed a robotic stratospheric balloon launcher to support NASA balloon-borne payload flights for meteorological and instrument testing in near-space environments
- Implemented a live sensor data visualization tool in python via serial communication with a microcontroller
- Designed, integrated, and tested a GPS-based high gain antenna tracker to support two-way telemetry for balloon payloads up to 32km in altitude

Undergraduate Researcher – High Performance Robotics Lab

Jan 2018 – Present

UC Berkeley

- Developed a submersible, waterproof quadcopter as a research platform for aquatic aerial vehicle launches including mechanical design, power electronics, and firmware modifications
- Designed a waterproof electronics enclosure and prototyped it in 3D printed polyurethane on an SLA printer
- Implemented embedded motor control program in C to support brushless motors for the lab's vehicles

Engineering Intern – Faraday Future

May 2017 – Aug 2017

Closures and Mechanisms Team

- Delivered dynamics models for power closures and actuator systems; implemented improved control strategies on a physical test rig
- Developed a camera based algorithm for determining the intensity of incident light using OpenCV in python; tested the algorithm on a physical test rig
- Prototyped and evaluated algorithms for monocular structure from motion to obtain a semi-dense point cloud using OpenMVG in python and C++

Undergraduate Researcher – Robot Learning Lab

Dec 2015 – Sept 2016

UC Berkeley

- Handled mechanical design and fabrication of component mounting systems for a quadcopter under a PhD student applying deep reinforcement learning algorithms for quadcopter control in uncertain environments
- Manipulated flight controller firmware to allow for an onboard companion computer interface with an Nvidia Jetson embedded Linux machine
- Developed control scripts in python utilizing ROS, DroneKit, and a Vicon motion capture system for state estimation

EXTRACURRICULARS

President – UAVs@Berkeley

Aug 2017 – Aug 2018

- Facilitate communication with UC Berkeley administration on drone policy and operations on campus
- Coordinate acquisition of funding for the club from on and off campus sources
- Enact administrative and project management decisions to further the long-term vision of the organization

SKILLS

- Python, C++, Matlab/Simulink, LaTeX, GNU/Linux, ROS, OpenCV, microcontrollers
- 3D CAD, 3D printing, laser cutting, CNC milling, water jetting
- Strategic planning, project management, teaming, research, rapid prototyping