Robert Barlow

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Robotic Engineer

BarlowR.com

Education

Class of 2021

Olin College of Engineering

BS in Engineering:Robotics

3.6 GPA

Projects

PCT & Long Trail Thru-Hike

Personal Endeavor | May 2021-Sept 2021

- Successfully through hiked the Pacific Crest Trail from Los Angeles, California to the Canadian border in Washington
- Subsequently hiked the Long Trail from the southern border of Vermont to the northern border of Vermont
-Total of ~2400 miles walked entirely self-supported

+One

Entrepreneurial Venture | Jan 2019- Current

- Received the Babson Weissman fellowship to develop new tools for avalanche victim discovery
- Worked on a team of two to conduct market research, build custom electronic hardware, write embedded software and do extensive user-testing in an attempt to advance the state of the art in backcountry safety gear.

Atari Deep RL

Computational Robotics Course | Dec 2020

- Implemented both classical and deep reinforcement learning agents in Python/PyTorch in various OpenAi Gym environments
- Used both DQN and policy gradient approaches and wrote functionality to parallelize multi-environment simulation

xieruishen.github.io/Atari_with_RL/blog

FLOW

Mechanical Prototyping | April 2017

- Designed and constructed single motor driven kinetic sculpture inspired by oceanic wave motion.
- Lead system design and CAD on team of 5 students

portfolio.barlowr.com/flow

Experience

Robotic Engineering Intern

MVP Robotics, Bradford, VT

January 2021 to May 2021

Developed a standalone tester for MVP's HEKTR Targets

- Designed & implemented a novel impedance measurement circuit system to evaluate consumable target deterioration
- Designed & assembled PCBAs comprising the impedance measurement system, high power burnout system, LCD display, Beaglebone computer, battery & charging circuity.
- Wrote an API for all system functions, a physical LCD UI and a web UI

Mechanical Engineering Intern

Zipline International, Half Moon Bay, CA

July 2019 to July 2020

- Worked on a small, multi-disciplinary team to take Zipline's perception system from prototype to volume production.
- Designed hardware from one-off 3D prints through injection molding.
- Worked closely with EE team to design a compute module PCBA and enclosure solution within highly constrained size, weight, weather and thermal requirements.
- Purchased & personally refurbished a South Bend 14" lathe to expand machine shop capabilities.

Lead Instructor

Olin Shopbot & Woodworking Space

September 2017 to June 2019

- In charge of Olin's Shopbot, a large scale 3 axis CNC router, and associated spaces.
- Duties included preventative and on- demand maintenance work, continuous improvement projects, and instruction of fellow students and faculty in CAM & machine operation.

Electro-Mechanical Eng. Intern

UC San Diego Engineers for Exploration

June 2018 to Sept 2018

- Worked closely with faculty at Scripps Institute of Oceanography to create a sensor system to improve diver workfow in underwater 3D mapping of coral reefs.
- System leverages an IMU, pressure sensor, magnetometer and microprocessor to aggregate and display crucial environmental information to divers.

Robotic Research Intern

Olin Intelligent Vehicle Lab, Needham, MA

May 2017 to September 2017

- Designed, built and flew fixed wing sUAS (small unmanned aerial systems) for Scientific Systems Company, Inc. contract.
- Developed a novel system for dropping "fire suppressant" while in-flight.
- Compiled demo video of high speed, low altitude payload deployments

Toolbox

Python 3 | C++

Solidworks | Fusion 360 | NX

Photoshop | Illustrator | Indesign

CAM | CNC | Mill | Lathe

Woodworking | Composite Layup

KiCAD | Eagle