

# Robert Barlow

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Robotic Engineer

**BarlowR.com**

## Education

Class of 2021

Olin College of Engineering

BS in Engineering:Robotics

3.5 GPA

## Projects

### +One

Babson Foundry | May 2019

- Received a fellowship to develop an autonomous drone for avalanche victim search.
  - Worked on a team of two to build custom multirotor hardware, design RF circuitry and write C++ embedded software in an attempt to advance the state of the art in safety gear.
- portfolio.barlowr.com/one

### GeoDecibel

Personal Project | March 2019

- Developed custom wooden speakers based on acoustically optimized rhombic dodecahedron configuration.
  - Designed and assembled crossovers with self-wound inductors.
  - Leveraged 3-axis CNC router & woodshop for fabrication and COMSOL for simulation
- portfolio.barlowr.com/geodecimal

### Birdhub

Principles of Engineering | December 2017

- Designed and constructed a solar powered bird monitoring station with an integrated feeder and cellular IoT connection.
  - Worked on a team of 5 students. Lead mechanical design and software.
- poe.olin.edu/2017/TheBirdhouseProject/

### 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

### Mechanical Engineering Intern

Zipline International, Half Moon Bay, CA

July 2019 to July 2020

- Worked on a 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.
- Supported mechanical lifecycle testing work and developed a custom wirelessly transmitting in-line tension gauge to characterize real-time aircraft recovery forces
- Setup an electrical prototyping space and helped to maintain Zipline's machine shop.
- 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.
- Also worked with faculty to create a new advanced woodshop where I worked as an instructor.

### 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 workflow in underwater 3D mapping of coral reefs.
- Worked on a team of two to design, manufacture, and test this system, which 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.
- sUAS leveraged first-person view systems, long range control and was designed for very high payload capabilities.

Python 3 | ROS | C++ | MATLAB

NX | Solidworks | Fusion 360

Photoshop | Illustrator | Indesign

CAM | CNC | Mill | Lathe

Woodworking | Composites

Electrical Prototyping | Eagle

Toolbox