

EDUCATION

Franklin W. Olin College of Engineering

Bachelor of Science in Mechanical Engineering May 2018

GPA 3.5

Relevant Coursework: Dynamics, Introduction to Mechanical Prototyping, Mechanics of Solids and Structures, User Oriented Collaborative Design, Mechanical Design, Systems, Fundamentals of Machine Shop Operations, Thermodynamics, Software Design, Bayesian Inference and Reasoning

EXPERIENCE

COOPER TIRE AND RUBBER COMPANY

Tire Materials and Mechanics Intern

Findlay, Ohio
Aug 2016 to May 2017

- Created a GUI in Matlab to modify tire tread patterns and calculate the total projected sipe length.
- Developed a procedure to measure the pressure along the tire-rim interface. Created a GUI in Matlab to map the measured pressure to tire profile drawings.
- Characterized road surfaces using chromatic confocal profilometry to measure surface profiles. Created a program in python to calculate the power spectral density of each road surface to compare micro and macro roughness of surface up to 8 microns of resolution.
- Tested the validity of a portable rotational tribometer to compare the coefficient of friction of tread rubber.
- Evaluated sensitivity and backscatter of RFID labels on tires.

Materials Laboratory Intern

Findlay, Ohio
Feb 2017 to May 2017

- Used analytical chemistry to quantify the weight percent of free resorcinol in a resin using gas chromatography - mass spectrometry.
- Analyzed the particle dispersion on rubber surfaces using a surface profilometer.
- Worked on creating a master curve in python for time temperature super position of viscoelastic materials.

ARTAIC: CUSTOM MOSAICS THROUGH ROBOTIC FABRICATION

Mechanical Engineering Intern

Boston, MA
May 2015 to Aug 2015

- Designed and manufactured a failure prevention device using a laser cutter for the mosaic laying robot. This device eliminated the frequently occurring failures that had cost the company thousands of dollars in the past.
- Prototyped a cast mold procedure using polyurethane and silicone rubbers for custom mosaic tile grids.
- Designed a new quality inspection station specific to production employee needs. Ordered necessary materials and hardware and assembled the station for production employee use.

RESIDENT RESOURCE

Olin College of Engineering

Aug 2014 to May 2016

- Similar to RA on other campuses, selected to guide all students on campus in matter of health, safety, and well being.
- Managed emergency situations related to mental health and personal safety.

PROJECTS

SOFT ROBOTICS UNDERACTUATED HAND

- Using mechanical prototyping and iterative design techniques, designed and fabricated an underactuated hand.
- Prototyping techniques included sheet metal bending, laser cutting, 3D printing, and polyurethane rubber molds.
- Created technical drawings and a complete bill of materials for fabrication of the hand.

HUMAN POWERED VEHICLES

2013 to 2015

- Member of the Human Powered Vehicles team. Designed and fabricated an aerodynamic recumbent tricycle and compete in the ASME competition each year.
- Designed adjustable pedal system to accommodate every member of the team.
- Aided in the fabrication of an aerodynamic carbon fiber fairing using composite mold construction techniques.

STACK: USER DESIGN

- Designed a gardening platform for community gardeners that acted to double the gardening area and extend the growing season.
- Completed user research on community gardeners through in person interactions and working at community gardens.
- Performed user co-designs to improve the final product and validate the user need.

SKILLS

TECHNICAL FABRICATION: 2-Axis CNC and Manual Mill, Oxy Acetylene Brazing, Lathe, Composites

SOFTWARE: Solidworks, Matlab, Adobe Illustrator, LaTeX, Python