# Rebecca E. Schwartz

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#### Education

**Master of Engineering in Mechanical Engineering |** Control of Robotic and Autonomous Systems University of California, Berkeley | Expected Graduation: May 2020

Bachelor of Science in Mechanical Engineering | Minor in Engineering Management | June 2019 Pennoni Honors College | College of Engineering | Drexel University, Philadelphia, PA | GPA: 3.58

## **Projects**

### Sensor Robots for Emergency Response: Centrally Actuated Mobile Robot

Sept. 2019 - Present

- Worked with 2 students to build Squishy Robotics' first centrally actuated mobile robot
- · Assembled and troubleshooted Arduino-related hardware for the robot

### **Advanced Controls**

Controlling a Simulated Landing of the SpaceX Starship Rocket on Mars Dec. 2019

- Worked with 4 students to implement a Model Predictive Controller (MPC) with reference tracking
- Tested robustness via varying initial conditions and environmental disturbances

#### **Robotics**

#### Pick and Place Challenge

Jan. - March 2019

- Designed and built a 2P 3R Vex robot to meet the requirements of a pick-and-place challenge
- · Coded and wired Arduino UNO in C++ to control all 5 selected motors using the serial monitor

### Feedback Control with Optical Shaft Encoders Honors Project

Jan. – March 2019

• Built a 2R robot to demonstrate feedback control using optical shaft encoders and Arduino UNO

### **Wearable Energy Harvesting Device Senior Design Project**

Sept. 2018 – May 2019

- Collaborated with 2 materials engineering students to build wearable energy harvesting components
- Engineered a yarn-coater for mass production of MXene coated yarns for knitted antennas with <\$100

### **Computer Vision Independent Side Project**

June – July 2019

- Implemented an image classifier with Google's GPU Compute Engine, Jupyter Notebook, and fastai
- Hand selected 150 impressionist paintings for training and testing, receiving a 67% success rate

## **Advanced Programming**

Jan. 2018 – June 2019

• Worked with a computer science student to build and implement an automatic file organizer in Unix

#### Computer Skills

Python, MATLAB, Arduino/ C++, Bash/ Unix, AutoCAD, Creo, Revit, Excel, Jupyter/ Pytorch/ fastai

## **Professional Experience**

**Mechanical Engineer Co-op** | Bruce Brooks and Associates, Philadelphia, PA

Apr. - Sept. 2018

- · Designed mechanical and plumbing building systems using fluid mechanics and thermodynamics
- Drafted plumbing, fire protection, and mechanical systems for 10 projects in Revit

### Formulations Engineer Co-op | FMC Corporation, Philadelphia, PA

Apr. - Sept. 2017

- Managed the front end of a \$400K project to upgrade and relocate an insecticide packaging line
- Designed and implemented a scheme to minimize a biological cleanout's water usage by 42%

## Project Manager Co-op | Children's Hospital of Philadelphia, Philadelphia, PA

March - July 2016

- Led a \$49K mechanical project to renovate a Variable Air Volume (VAV) system
- Presented need for new piping systems after processing 268 pages of ultrasonic testing data in Excel

#### Leadership

President of Drexel Honors Student Advisory Committee (HSAC)

June 2018 – June 2019

• ITF Taekwondo Instructor

July 2010 – Sept 2015