# Rebecca E. Schwartz

+1 302-824-1346 **|** hello@becschwartz.com **|** becschwartz.com **|** Berkeley, CA

## 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