

# MIYUKI WELDON

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## EDUCATION

University of California, Berkeley

**B.S. in Mechanical Engineering | GPA: 3.78**

**Expected: 2020**

**M.S. in Mechanical Engineering**

**Expected: 2021**

**Relevant Coursework:** Manufacturing and Tolerancing, Statics and Mechanics, MATLAB, Dynamics, Controls, Circuit Design, Lagrangian Mechanics, Mechanism Design, Fluids, Materials, Mechatronics

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## EXPERIENCE

### **Foxeye Robotics – Mechanical Engineering Intern**

**May 2019 – Present**

- Did extensive prototyping on an acquisition end effector that was SLA printed with the Form 2
- Addressed safety factors by designing a breakaway end effector that released above a threshold force
- Explored Form 2 materials along with printing practices that balanced resolution with ductility
- Designed a holder of non-rigid parts that were .15mm in diameter, pushing the resolution limits
- Designed parts that interfaced with the end effector actuator for a replaceable EF to ensure repeatability

### **Hybrid Robotics Lab – Undergraduate Researcher**

**May 2018 – May 2019**

This lab is a UC Berkeley Mechanical Engineering lab focusing on controls of dynamic robotic systems.

- Worked on Thigh-Actuated Bipedal Robot for Extreme Agility project
- Led a project where a cycloidal gearbox is designed, optimized, and 3D printed for the robot's thigh
- Tested and performed analysis on different materials to determine 3D printed strength

### **Pioneers in Engineering – Director of Engineering, Mechanical PM**

**May 2017 – Present**

PiE is a student-run non-profit at UC Berkeley that provides an extremely discounted robotics competition to 300+ students from underserved high schools in the Bay Area.

- Managed and advising the hardware-based engineering teams
- Explored long term, large scale engineering projects to reduce the costs of the robotics kit
- Sourcing and talking to manufacturers to acquire cheap electrical and mechanical parts
- Modeling and creating engineering drawings and contacting manufacturers to produce parts
- Learned to resin cast polyurethane gears to cut outsourcing costs

### **Electrical Engineering 16A – Undergraduate Student Instructor**

**August 2019 – Present**

- Taught discussion sections and office hours covering basic circuits, linear algebra, and optimization

### **Planting Robot Project – Watering System Designer**

**October 2018 – December 2018**

- Designed a gravity fed watering system routed from a 2L bottle and controlled by a solenoid valve
- Printed a bottle cap (PLA) and a gasket (TPU) with rigid polyethylene and flexible silicone tubing

### **Wireless Deadbolt Unlocker Project– Mechanical Design Lead**

**October 2018 – December 2018**

- Designed and manufactured an external, wireless, mechanical deadbolt unlocker for a final class project
- Chose a 3:1 gear ratio to supply torque and provide the correct degrees of rotation from a servo motor

### **Engineers Without Borders – Peru Team Member**

**August 2016 – May 2018**

- Worked to develop solutions to provide clean water to replace arsenic filled well water in rural Peru

### **Student Learning Center – Math Tutor**

**January 2018 – August 2018**

- Tutored undergraduate math (Calculus, Linear Algebra) at the UC Berkeley Student Learning Center
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## SKILLS

AutoCAD and Solidworks

GD&T

Labview

Machining

MATLAB and Simulink

ANSYS/FEA

3D Printing (FDM, SLA)

Laser Cutting