MIYUKI WELDON

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EDUCATION

University of California, Berkeley

B.S. in Mechanical Engineering | GPA: 3.78 **Expected: May 2020**

M.S. in Mechanical Engineering **Expected: May 2021**

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

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

Living Loop – Structural Engineering Intern **May 2020 – August 2020**

- Designed track intersections for transportation pods associated with Hyperloop technologies
- Modified these designs to be manufactured using both small and large sized 3D printing

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.

- 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 UC Berkeley non-profit that provides an accessible robotics competition to underserved, local students.

- Managed and advised the hardware-based engineering teams
- Sourced and talking to manufacturers to acquire low cost electrical and mechanical parts
- Created engineering drawings and contacted manufacturers to produce parts
- Learned to resin cast polyurethane gears as well as experimented with injection molding to cut costs

Electrical Engineering 16A – Undergraduate Student Instructor **August 2019 – Present**

- Taught discussion sections and office hours covering basic circuits, linear algebra, and optimization
- Wrote python scripts to output randomized LaTeX files for student exams

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

SKILLS

Solidworks and Fusion360	GD&T	CNC/CAM	Manual Machining
MATLAB and Simulink	FEA	3D Printing (FDM, SLA)	Laser Cutting/Waterjet