MIYUKI WELDON

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EDUCATION

University of California, Berkeley

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

M.S. in Mechanical Engineering | GPA: 3.96 **May 2021**

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

SKILLS

Solidworks, Fusion360, MATLAB, CAM, CAD, GD&T, FEA, Arduino, 3D Printing (FDM, SLA), CNC Milling, Injection Molding, Laser Cutting, Waterjet, Manual Machining (Mill, Lathe), PCB Design

EXPERIENCE

Relevant Experience

Chapman University – Makerspace Manager **May 2021 – Present**

- Setting up new makerspace along with equipment selection and safety procedures to open in Fall 2021

Foxeye Robotics – Mechanical Engineering Intern **May 2019 – May 2021**

- 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 printer resolution limits

Hybrid Robotics Lab – Undergraduate Researcher **May 2018 – May 2019**

- Led a project where a cycloidal gearbox is designed, optimized, and 3D printed for a 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 – May 2019**

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

- Managed and advised the 30+ person hardware-based engineering teams
- Created engineering drawings to outsource sheet metal parts and ultimately cut kit metal costs by $3000
- Learned to resin cast polyurethane gears and experimented with injection molding to reduce to <$1/gear

Projects

The Maker Machine – CNC Mill **October 2019 – December 2019**

- Designed, fabricated and assembled a mini CNC mill for woods, plastics, and PCB boards
- Tested with different tool paths and parameters to find the appropriate feeds and speeds

The Maker Machine – 3D Printer **August 2020 – December 2020**

- Designed, fabricated and built my own 3D printer with a plywood frame and cartesian kinematic design
- Wired, modified firmware, and did extensive calibration to get the printer running smoothly

The Amazing Cane **January 2020 – May 2020**

- Designed part of a 3D printed white cane attachment to alert visually impaired people of obstacles
- Wrote the Arduino code and set up the electronics for an ultrasonic sensor, speaker, and vibration motor

Additional Experience

Electrical Engineering 16A – Undergraduate/Graduate Student Instructor **August 2019 – May 2021**

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

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