DORIAN CRUTCHER
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KEY SKILLS

- **Mechanical Design:** Confident command over SolidWorks, and Fusion 360 CAD/CAM software to draft 3D models while following GD&T guidelines
- **Rapid Prototyping:** Able to use mechanical and electrical practices to quickly devise a low-cost prototype
- **Programming Skills:** Intermediate Level of experience with Python, C++ and MATLAB

TECHNICAL SKILLS

- **Fabrication:** CNC machining, shopbot, water cutter, laser cutter, Bridgeport mill, FDM 3D Printers Arc and Gas welding, lathe and other metal fabrication tools
- **Electrical Design:** KiCAD, schematic design, soldering with iron, solder paste with heat oven
- **Programming:** C++, Python, Processing, MATLAB, EES

EXPERIENCE

UC Davis Laboratorium of Marvelous Mechanical Motum
Undergraduate Researcher, Sept 2018 – Dec 2018 **Davis,CA**

- Conducted research, maintenance, and design modifications on a double pendulum robot
- Goal: Design a program in C/Python that will allow the professor to use a double pendulum robot to rapidly test different controller models that most closely resemble a human's ability to balance on unstable objects.
- Used “Processing” to design a GUI interface to allow for rapid controller model testing with the robot.

Chirp Microsystems **Berkeley, CA**
Mechanical Engineering Intern, June 2018 – Sept 2018

- Designed and manufactured test setups for ultrasonic sensors using Solidworks and KiCAD
- Drafted and 3D printed modified VR controllers with ultrasonic sensors
- Performed Reliability and Repeatability tests for sensors
- Conducted presentations for Projects and data analysis from ultrasonic sensor tests

UC Davis Engineering Student Startup Center (ESSC) **Davis, CA**
Workshop Manager, Mar 2016 – Present

- Oversaw the creation of new workshops and worked with a team of student managers to draft teaching materials
- Teach 3D printing, 3D modeling, Arduino programming, and CNC mill programming workshops
- Managed the shifts and workshop schedule for student staff members
- Analyzed students' designs and provided feedback on design optimization and the use of rapid prototyping

UC Davis Hyperloop Team **Davis, CA**
Head Designer & Sub-System Leader – Eddy Braking System, Sept 2017 – June 2018

- Lead a team of engineers from diverse backgrounds, by delegating tasks, creating and reviewing designs, and providing an overall direction of the best design strategy for the pod
- Research Eddy Current and Electromagnetic theory to perform qualitative testing on magnetic brakes
- Design and improve upon designs using SolidWorks for eddy braking system
- Utilize Finite Element Analysis tests with ANSYS
- Utilize Engineering Fabrication lab to build test setup and prototypes for Eddy Brakes and experimental test setup

EDUCATION AND ACADEMIC ACCOMPLISHMENTS

University of California, Davis (GPA: 3.07) B.S. in Mechanical Engineering, expected (12/2018) **Davis, CA**

- Engineering Dean’s List Spring 2018
- 1st place in gearbox design competition for a wench-pully race
- Victorious in a UCD vs Meijo Japanese University Automated Recycling Sorter Competition