DORIAN CRUTCHER
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EDUCATION

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

- Team won best in class for final MATLAB project
- Engineering Dean's List Spring 2018
- Won Automated Recycling Sorter Competition against Japanese University
- 1st place in gearbox design competition for a wench-pully race

SKILLS

- **FEA Software**: ANSYS (HFSS and Maxwell) - CNC Programming
- **CAD/CAM**: SolidWorks - PTC Creo - Repetier Host - Fusion360 CNC programing - MATLAB/Simulink
- **Coding Languages**: C/C++Programming - Python with Pycharm for data analysis and basic machine learning
- **Hardware**: Sensors (ultrasonic, inductive, photo sensor, accelerometer), CNC and manual Machining operations (Lathe, Band saw, Milling, etc.), 3D Printing, Laser Cutting, Mechatronics (Arduino Projects, mini robotics)
- **Communication/Practices**: Project Presentations, Workshop Presentations, Technical Document Writing, Solidworks PDM for CAD file sharing, Experience Working with GD&T – Systems Engineering

EXPERIENCE

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

- 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 the 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 - Present

- 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

UC Davis Aeroacoustics/Aerodynamics Research Lab **Davis, CA**
Research Assistant, Mar 2017 – Oct 2017

- Conducted mathematical and computational research on fluid mechanics, aerodynamics, and aeroacoustics with in applications for rotorcraft, wind energy and turbomachinery
- Utilized NASA's OVERFLOW and OVERGRID software to create CFD simulations