**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