VIVIAN ZHOU

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EDUCATION

B.S. Mechanical Engineering, Minor in Computer Science Expected Graduation: December 2019

University of California, Davis: 2015 – Present **| GPA: 3.31, Senior**

- **Mechanical Coursework**: Manufacturing Processes, Mechanical Design, Circuits, Thermodynamics, Dynamics, Embedded Systems, Fluid Mechanics, Thermo-Fluid Dynamics, Heat Transfer, Mechatronics

SKILLS

Technical Skills: SolidWorks, GD&T, FEA Analysis, MATLAB, Machine Tool Technology, ESPRIT, 3D printing, Bond Graphs, C, C++, C#, Java, Computer Architecture (x86 Assembly), Digital Circuits, Linux, Unix, Python.

Other Skills: Multilingual (Shanghainese and English), Technical Writing, Microsoft Office & Suite, Data Analysis, Cross-Team Communication, Conflict Resolution, and Project Management.

ENGINEERING EXPERIENCE

Advanced Research of Manufacturing Systems (ARMS) Laboratory, UC Davis Aug. 2017 – Present

Undergraduate Researcher

- Calibrated CAM software and NC programming of 3/5 axis CNC machines with ESPRIT.
- Worked with graduate students to develop new hybrid CNC machining techniques, additive manufacturing methods, and mechatronics system designs.
- Machined acrylic cyclone separator used within a Lasertec 65 3D that separates inert gases from metal powder and redistributes them into a feeder line in the directed energy deposition process.

IDEX Health & Science, Rohnert Park, CA June 2018 – Sept. 2018

Mechanical Engineering Intern

- Performed life cycle testing, pressure testing, and thermal testing in the R&D laboratory on valve products. Analyzed data according to DFMEA and wrote test plans and reports for all experiments.
- Conducted root cause analysis on a defect in vacuum pumps that caused a high return rate due to early failures and proposed manufacturing solutions to alleviate the ongoing issue.
- Designed and prototyped a hinge lid and fixtures to be used in an HPLC prototype machine, using Reaction Injection Molding and Thermoforming design considerations. Revised individual designs after potential vendor consultations for manufacturing feasibility and streamlining production.
- Organized a design of experiments (DOE) on valves varying in pressure rating, rotor seal material and stator boss diameter that helps facilitate future valve designs for various consumer needs.

Western Cooling Efficiency Center, UC Davis Sept. 2017 – May 2018

Student Research Assistant

- Produced MATLAB code to analyze daily cooling data retrieved from retrofitted homes.
- Constructed custom airflow data collection devices utilizing hardware and tools in the laboratory.

ENGINEERING PROJECTS

Custom UAV Build, Davis Drone Club Feb. 2018 – Sept. 2018

- Designed and machined upper and lower framework, battery enclosure, and sensor board for a custom drone with Return To Home (RTH) capability.
- Compared strain from strain gauges with Arduino programming to data from SolidWorks Simulation.

Gyroscope Spin-Off Sep. 2017 – Mar. 2018

- Designed a fully functioning gyroscope through SolidWorks (CAD).
- Constructed individual pieces for assembly using lathes, drill presses, mills, and a CNC machine.

CAMPUS AFFILIATIONS

- Regents' Scholars Society Sep. 2015 – Present
- Theta Tau, Professional Engineering Fraternity Jan. 2017 – Present