Logan Reuter

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Executive Summary

- Current mechanical engineering graduate student with a passion for mechatronics
- Team player who can quickly adapt to new environments.
- Problem solver that produces results
- Passionate about learning new things and growing my skills as an engineer

Experience

Mechatronic Engineering Intern *Fremont, CA*

Ultima Genomics *June 2024 - Sept. 2024*

- Developed and implemented a Python-based software to automate heater PCB generation according to specific design parameters, enabling the company to transition from an expensive supplier and saving approximately $2,000 per heater.
- Constructed a test bench to assess the functionality of the generated heaters, ensuring proper heat distribution, and utilized an Analog Discovery 3 to automate data collection for extended testing.
- Designed a PCB in KiCAD to test for a new cable for noise interference and constructed a test bench to evaluate the noise interference on the cable.
- Designed a comprehensive PCB in Altium Designer to power a heater system, integrating critical components including a PWM driver, differential I2C driver, and voltage regulator.

Shop Technician *Davis, CA*

Diane Bryant Engineering Student Design Center *Aug. 2023 - June 2024*

- Conducted hands-on training for students in key manufacturing techniques, including soldering, laser cutting, 3D printing, milling, and lathe operation, ensuring proficiency in safe, effective practices.
- Designed a specialized PCB to evaluate students' soldering skills, prioritizing safety in the training.
- Identified and resolved an issue that caused the degradation of 3D printer filament, cutting the amount of wasted filament in half.
- Utilized a range of machinery to produce essential shop components.

Mechatronic Engineering Intern *Fremont, CA*

Ultima Genomics *June 2023 - Aug. 2023*

- Developed a Python script that automated operational testing of machinery by collecting data during operation and performing diagnostic checks then presenting findings to the user via an HTML and Excel sheet report, saving manufacturing engineers 1 hour per machine.
- Authored a Python library for seamless interaction with ACS controllers, furthering the scripting capabilities of other developers.
- Established a self-hosted GitHub runner server for automated unit tests, ensuring code functionality.
- Authored a Python library to store large amounts of data obtained over extended testing simplifying data sharing and access.

Engineering Intern *Petaluma, CA*

KVAL Inc. *June 2019 - Aug. 2021*

- Operated a CNC engraver to produce all placards and specification plates for machinery.
- Developed a full-stack web application using Vue, ExpressJS, Sequelize and SQLite to manage placard and spec plate requests, with features for automatic spec plate generation, automatic updating of info via an internal API, and Slack notifications upon a new request.

- Created a SolidWorks macro in Visual Basic to automate CAD drawing template changes, saving the engineering team roughly 150 hours of work.
- Modeled various components in SolidWorks, including buttons, motors, stickers, extending our library of components.

Research/Labs

Undergraduate Researcher *Davis, CA*
BIRD Lab *Feb. 2024 - June 2024*

- Developed a Python script to process over 1000 3D bird wings scans from MATLAB .mat files, enabling advanced analysis and data extraction.
- Utilized multi-threading paradigms to reduce the total runtime for the script to a few minutes.
- The script capabilities included aligning all wings to a uniform orientation, generating a specified number of wing cross-sections in equally spaced intervals, and smoothing airfoil profiles for enhanced performance in Computational Fluid Dynamics (CFD) analysis.
- Exported airfoil cross-sections to CSV files for future aerodynamic analysis, providing high-quality data for a research paper analyzing the wings of various bird species.

Undergraduate Researcher *Davis, CA*
ARMS Lab *May 2023 - June 2024*

- Fabricated multiple substrate stainless steel plates using a Bridgeport mill for use on a DMG Mori metal 3D printer, supporting data collection on the thermal effects of the printing process.
- Manufactured numerous aluminum mounting plates for secure attachment of substrate plates.
- Designed and manufactured a custom adapter plate to mount a vice onto a DMG Mori CNC mill, overcoming compatibility issues with existing equipment.
- Restored an older DMG Mori NVD1500 to operational condition, conducting performance tests to ensure functionality.
- Documented the servicing process, creating a reference guide for future students to streamline maintenance procedures.

Education

University of California, San Diego Expected: June 2025
Master of Science, Mechanical Engineering

University of California, Davis June 2024
Bachelor of Science, Mechanical Engineering

Skills

CAD Software: SolidWorks, Fusion360, OnShape, AutoCAD, AutoDesk Inventor
Programming Language: Python, MatLab, Javascript, Go, C/C++
ECAD Software: Altium Designer, KiCAD
Soft Skills: Communication, Problem Solving, Analytical Thinking, Collaboration, Keen Attention to Detail, Hard Working

Accomplishments

Eagle Scout, Troop 9 Aug. 2019