Aaron Lee

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EDUCATION

B.S.E. Mechanical Engineering Graduation: May 2027

University of California, Berkeley | College of Engineering

Relevant Coursework: Linear Algebra & Differential Equ,**[ME108]**Mechanical Behavior of Engineering Materials, **[ME150]**Modeling and Simulation of Advanced Manufacturing Processes, **[E26]**Three-Dimensional Modeling for Design, **[ME100]** IOT, **[ME104]** Dynamics, **[E178]** Statistics and Data Science, **[MEc178]** Manufacturing and Designing for the Human Body, **[MSE45]** Properties of Materials

Relevant Skills: CAD, Solidworks, Fusion 360, Onshape, Bambu Studio, Orca Slicer, Matlab, Python, Java, Arduino, GitHub, HTML, Thonney, Operational Amplifiers, Diodes, Transistors, Digital Logic Gates, KiCad, Multivariable Calculus, Applied Linear Algebra, Differential Equations, Discrete math

PROFESSIONAL EXPERIENCE

Taiwan Semiconductor Manufacturing Company (TSMC): Epitaxy EE | May - Aug 2025 **Phoenix, AZ**

- Experimented with SpotLamp positionings to ensure an ideal thickness and thickness profile of a silicon wafer.
- Collaborated with ASM to analyze different heating positions & tuning temperature inputs to ensure uniform wafer thickness profiles
- Analyzed FDC alarms & SPC charts and conducted root cause analysis on recurring failures and tool problems
- Performed preventative maintenance and supported continuous improvement of maintenance procedures

Tsao Lab: NeuroVision|Mechanical Design Engineer |2025 - Present **Berkeley, CA**

- Design specific experimental apparatuses, like an interactive screen that helps current experiments on the psychology of monkeys
- Collaborated with PHD students to design a seat and an experimental cage to ensure no harm and cooperation with the animals.
- Designed a custom imaging scope tool to test ultrasonic neuromodulation in mice and discovered cortical activity patterns consistent with auditory pathways stimulation rather than direct neuromodulation.

PROJECTS & RESEARCH

Wind Turbine Blade Aerodynamics Generator| May - Nov 2024 **Berkeley, CA**

- Used Solidworks to design Windmill blades and tower. Researched optimal tower shapes and sizes with optimal sturdiness and stability. Researched optimal angle of attack for the windmill blade to ensure peak performance.
- Constructed the base of the Windmill tower with two 3D printed parts. Tested and printed with many materials like ASA, ABS, PETG, PLA, etc. Tested ASA filament for windmill blades for low-density qualities, large temperature changes, strength, and stiffness.

Automated Lab System Incubator | Jan - Present **Berkeley, CA**

- Created an enclosed system to grow and nurture neuron brain cells by exchanging media and building a microscope to observe them.
- Converted a 3D printer and repurposed its end effector to control a micropipette to exchange median and microscope for observation. The end effector will change based on which tool is needed.
- Created a rocking system to tilt old median liquid to ensure proper exchange of new median. Created a microscope with remote control capabilities to zoom in and out for precise observation of the neurons. Created a pipetting system to exchange median and pipette tips to reduce contamination. This project tested my understanding of precision manufacturing.

6-axis Robotic Arm | May - Nov 2024 **Berkeley, CA**

- The purpose of the 6-axis robotic arm was to test the limits and understanding of automated manufacturing.
- Created the physical structures and gears using Solidworks. Used the CAD files to 3D print and manufacture the parts. Finally, I used Arduino software and hardware to control the arm remotely. This project tested my design, CAD, circuitry, and software skills

LEADERSHIP AND WORK EXPERIENCE

Neurotech, UC Berkeley |*Mechanical Lead*|2023 - Present **Berkeley, CA**

- Lead the Automated Lab System Incubator project. Direct the manufacturing, design, and controls software.
- Collaborated with the Connectomics team and RoBLES project. Designed a 5-axis robot to communicate with an EEG.
- Worked with a team of 6 to create a haptic feedback blanket to communicate movement from the multi-axis robot, which is more immersive. Lead manufacturing on an MEA system to send electric potentials to cultured neurons and block external sounds & signals.

Space Enterprise at Berkeley (SEB), UC Berkeley | *Manufacturing* |2023 - Present **Berkeley, CA**

- Designed and manufactured a tracking system to receive telemetry data, like pressure, speed, temperature, etc, from a liquid rocket.
- Collaborated with the avionics division to fit the necessary electrical components with the tracking satellite dish.

ADDITIONAL INFORMATION

Interests: F1/motorsports, Music, Cooking, Photography, IM Soccer, Club Tennis, Basketball, cars, 3D Design