

Sasan Liaw

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Education

University of California, Berkeley

Graduating May 2028

Bachelor of Science in Electrical Engineering and Computer Science

GPA: 3.67/4.0

Coursework: Microelectronic Devices and Circuits, Computer Architecture, Designing Information Devices and Systems, Hands-On PCB Engineering, Structure and Interpretation of Computer Programs, Linear ICs

Technical Skills

Design and Analysis: Cadence Virtuoso, Altium Designer, KiCad, Ansys HFSS, LTSpice, Autodesk Fusion 360

Programming: Java, Python, Git, RISC-V • Familiar with C, C++, SQL, LaTeX, Scheme

Fabrication & Testing: Soldering, Solder Reflow, Electronic Testing Equipment (Oscilloscope, Adjustable Power Supply, Function Generator, and WaveForms Network Analyzer), 3D Printing, Laser Cutting

Experience

Marvell Nanofabrication Laboratory

Berkeley, CA

Process Engineering Intern

January 2026 - Present

- Develop photolithography process specifications, optimizing feature resolution on i-line resists (MiR701, 12XT).
- Investigate the effect of silicon dioxide layers and metal thin films on lithography and required dose-to-clear.
- Characterize resist exposure quality through scanning electron and atomic force microscopy.

Space Enterprise at Berkeley

Berkeley, CA

Avionics Engineer

September 2024 - Present

- Design, assemble, and test PCBs that integrate power, sensing, filtering, and control elements into functional systems, including a 16-channel thermocouple amplifier and scalable Hall effect-based fuel level tracker.
- Collaborate with engineers across multiple teams to establish design criteria and integrate solutions.
- Write firmware to create automated calibration procedures, translate sensor data, and validate performance.
- Pinpoint and resolve design flaws during physical testing by analyzing multimeter and oscilloscope outputs

Theoretical and Applied Fluid Dynamics Laboratory (TAFLab)

Berkeley, CA

Undergraduate Researcher

August 2025 - July 2026

- Design PCBs that manage power distribution and data acquisition for autonomous ocean-monitoring drones.
- Characterize solar panel power generation and assess the reliability of self-sustaining solar-charging systems.

E-OPTO

Berkeley, CA

Optical Engineering Intern

January 2025 - January 2026

- Characterize high-speed optical modulators by analyzing their frequency response in Ansys HFSS.
- Modify microstrip shape and size, and compare the simulation results to optimize performance.
- Document findings, present results weekly, and propose suitable next steps to streamline model analysis.
- Define custom material properties and excitations, and simulate models at 0-100 GHz.

Projects

Display Driver Operational Amplifier

April - May 2026

- Designed a telescopic differential input amplifier with a Class AB output stage to drive a 272×340 LCD at 60Hz using a single voltage supply and current reference, achieving 1.4V output swing in 120ns with <0.2% error.
- Validated the design in Cadence Virtuoso, iteratively improving power consumption, CMRR, and phase margin.
- Balanced tradeoffs to meet all specifications, leveraging custom scripts to calculate transistor sizing and biasing conditions using gm/Id design methodology.

Magnetic Fuel Level Sensing

October 2024 - Present

- Engineered and fabricated a modular tracking device using Hall effect sensors, 8-channel ADCs, passive filtering, and a SPI bus, achieving ± 0.25 cm positional accuracy with scalable architecture.
- Designed the schematic and layout of a sensor module that can interface with identical boards to create a sensor array of adjustable length, while fitting within an 11 mm diameter metal housing.
- Integrating this device into an engine test stand to measure fuel by tracking the position of a piston in the tank.