

SANJANA KALE

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Summary

Driven individual with hands-on experience from internships at Meta, NVIDIA, and Astrobotic Technology, and leading an Avionics team for three years, designing and testing electronics hardware and software for the Rocket Project club at UCLA. Eager to apply my practical engineering skills to enhance product development and innovation in challenging hardware engineering roles.

Education

UCLA – B.S. in Electrical Engineering

Expected Graduation: June 2026

Relevant Courses: Semiconductor Physics, Introductory Astrophysics, Electrodynamics, Optics, Special Relativity, Logic Design, Systems and Signals, Advanced Circuit Theory, C++ Data Structures and Algorithms, Computer Arch. and x86 Assembly, Software Construction Lab, Operating System Principles, Digital Signal Processing, Digital Design Lab (FPGA), Principles of Feedback Control.

Technical Skills

C, C++, Java, SolidWorks, EagleCAD/Fusion 360, Altium, Git, LTSpice, Logisim Evolution, MATLAB, Linux, Bash, Python, Soldering

Basic skills: HTML, SQL, Verilog

Professional Experience

Hardware Systems Engineering Intern ~ Meta

Jun 2025 - Sep 2025

FIO Workload Generation Automation using Python and Linux Scripts

- Developed an end-to-end application to generate storage benchmarks for HDD and SSD devices for data centers & server platforms.
- Implemented code to collect large amounts of server traffic (blktrace), perform novel data analysis to extract FIO parameters (IOPs, bandwidth, latency, sector distribution, etc), and generate and run a candidate job as a synthetic workload on a test system.
- Engineered an automation workflow to measure benchmark effectiveness via parameter-specific error calculation. Improved job parameters by using a proportional-integral (PI) feedback loop and running for N iterations to refine final output.
- Landed fully documented code after collaborating with teams, and delivered significantly more accurate candidate FIO workloads for the HDD platform that closely aligned with fleet traffic.

Hardware Validation Intern ~ NVIDIA

Jun 2024 - Sep 2024

Power Qualification on NVIDIA Flagship Products

- Validated and tuned multiple step-down voltage regulators on GeForce RTX 5090 GPUs.
- Performed qualification procedures such as transient, bode, efficiency, phase node, output ripple, sequence, and others.
- Contributed to BOM changes on voltage rails, ensuring the stability and performance of the product.
- Gained proficiency in using lab equipment such as oscilloscope, e-load, network analyzer, waveform generator, and DAQ.

Landers and Spacecraft Intern ~ Astrobotic Technology

Jun 2023 - Sep 2023

Power Control and Delivery team on Griffin Lunar Mission I

- Simulated power conversion designs with SPICE models; aided in PWM logic design for voltage regulation model.
- Auxiliary FET Switch - Created a test harness to automate testing within 16, 100A high power channels. Monitored board current, voltage and enable signals. Calculated accuracy/sensitivity to validate board requirements. Breadboarded ad hoc circuits.
- Used CircuitPython for I2C/SPI communication and SCPI libraries for DAQ/Eload/test bench programming.
- Used Python for automation scripts.

Activities

Rocket Project at UCLA ~ UCLA

Jan 2023 - July 2025

Electronics Sub-team co-lead (year 3) - Ares (Liquid Rocket) Team

- Led R&D to create control-oriented electronic systems capable of high-quality data acquisition and active control of propulsion parameters during flight. Adapted to poor timelines and unforeseen circumstances to personally provide deliverables by deadlines.
- Designed & tested SMD PCBs for 3 systems in Avionics. Validated load cell/strain gauge and pressure transducer telemetry.
- Developed software for high sampling rate data collection, Radio and CAN communications, and SD card logging in-flight.
- Created an Avionics GUI in Grafana to display live data from nosecone and body-tube systems. Fixed radio issues from prior years.
- Guided and mentored a team of 8; collaborated with other teams to achieve the best milestones in intercollegiate competitions.

Avionics team co-lead (year 1 & 2): Prometheus (Hybrid Rocket) and Ares (Liquid Rocket)

- Involved in the design, testing and integration of four systems to transmit and monitor real-time telemetry data (apogee, acceleration, orientation, GPS, and tank pressure), and electronically change engine parameters during flight (binary throttling).
- Worked on schematics and PCB layouts, developed a wireless remote arming system, and mentored team members in EagleCAD.

IEEE ~ UCLA

Oct 2022 - present

- MicroMouse: Maze-solving robot using STM32 micro. Did schematic design, PCB layout & testing; wrote C based Floodfill algorithm.

- IdeaHACKS: Designed a system to convert mechanical energy of a door's motion to electrical energy through a DC motor.
- Designed and built an RC combat robot to endure a BattleBots-like match using CAD and 3D printed assembly, won second place.

FRC Robotics ~ Cupertino High School

Sep 2021 - Mar 2022

- Worked on chassis/drivetrain mechanical assembly in the hardware team building the climbing mechanism for FRC's 2022 Monterey Competition.

Personal Projects and Volunteer Experience

May 2020 - Sep 2020

- Exoplanet detection: JavaFX based GUI for detecting transiting exoplanets using TESS light curve data.
- Pong, Wordle: Simple JavaFX based simulation to reproduce popular graphical games.
- Sewed over 250 reusable cloth masks to donate during the pandemic. Recipient of President's Volunteer Service Award (Gold) - 2020.