

LinkedIn



Erk Sampat

Electrical Engineering

esampat@ucsb.edu

GitHub



SKILLS

- Power Electronics
- High-Density PCB Layout
- Embedded Systems
- C++, C, and Python Programming
- Data Structures and Algorithms
- SPICE Circuit Simulation
- PCB Fabrication and Assembly Processes
- Electronics Lab Equipment
- Hardware and Software Debugging
- Technical Documentation; LaTeX

PROJECTS

SINESC

Electronic motor speed controller (ESC) for drones. Supports sensorless field-oriented control for maximal power efficiency.

UNIVERSAL LASER DRIVER

Low-power laser driver with ultra-wide input and output voltage range. Also built laser pointers of various wavelengths using the Universal Laser Driver.

SOLDERING GUIDE

Comprehensive guide for soldering through-hole components by hand.

RC DRONES AND PLANES

Built and flew remote-controlled drones and planes – primarily first-person-view drones, glider-style airplanes, and nitromethane-powered airplanes. Set up autopilot systems and Iridium satellite communications channel for a solar-powered airplane intended to sustain flight for multiple days.

SOLID-STATE TESLA COIL

Converts line voltage to several hundred kilovolts, generating foot-long electrical arcs. Used to demonstrate high voltage and electromagnetic induction.

EDUCATION

UC Santa Barbara – B.S., Electrical Engineering (2022–2026)

EXPERIENCE

Student Worker – Instructional Lab Group, UCSB Department of Physics (April 2023–present)

- Set up labs for all undergraduate physics courses.
- Managed inventory; repaired broken equipment.
- Documented lab procedures.
- Designed electronics projects to be incorporated into lab curriculum.