Lucas Liang

www.linkedin.com/in/lucas-liang • San Jose, CA • (408) 888-6915 • lucasliang04@gmail.com

EDUCATION

University of California, Santa Barbara: Electrical Engineering, BS *Expected Graduation: June 2025*
Coursework: Signal Analysis, Digital Design Principles, Analog/Digital Circuits & Systems, Solid-State Electronic Devices, Computer Architecture, Fields & Waves
Leadership: Committee Head, Theta Tau *GPA: 3.60 (Senior Standing)*

EXPERIENCE

UCSB Department of Electrical & Computer Engineering (Dr. Peng Li) Santa Barbara, CA
Undergraduate Researcher *April 2023-Present*
- Using PyTorch to conduct experiments on spiking neural networks in neuromorphic computing and ML applications
- Summarizing research papers on machine learning algorithms for deeper comprehension behind Temporal SNN's
- Simulated SVM & Softmax classifiers and trained a fully connected CNN with the CIFAR-10 dataset for image classification
- Developing a PSC alteration that converts a discrete-time to continuous-time system and training it with the NMIST dataset, so far increasing the model's accuracy by 0.7%

P2S Inc. Long Beach, CA
Electrical Engineering Intern *June 2022-September 2022*
- LACCD Power Efficiency Study: constructed single-line diagrams of high voltage field equipment and manhole profiles of feeder cables in CAD after on-site field surveys
- CSU Fullerton Arc Flash Study: used ETAP to generate TCC curves for protective device coordination and categorizing potential arc flash hazards by modeling electrical systems of campus buildings
- Mt. SAC Elevator Building Electrical Design: used Revit to circuit power and lighting systems, construct riser diagrams for the fire alarm systems, generate battery calculation schedules, and compute voltage drop and short circuit calculations

PROJECTS

NMOS Fabrication Santa Barbara, CA
Student Project *January-March 2023*
- Used photolithography, HF etching, and electron beam evaporation processes to fabricate 8 NMOS samples on silicon wafers
- Patterned masks with a contact aligner, analyzed junction depths with a Dektak profilometer, calibrated etch times with microscopic imaging, and conducted TLM and IV measurements with a 4 point probe

Analog Circuit Design Santa Barbara, CA
Student Projects *February-March 2023*
- Designed an RMS converter using only BJT ICs, opamp ICs, and passive resistors/capacitors for sinusoidal input signals between 50-100k Hz with amplitudes up to 4 V
- Designed a single stage differential amplifier with 100 voltage gain, 6 V_{pp} output swing, and CMRR of 66 dB for sinusoidal inputs up to 100k Hz and 20 mV with only discrete MOSFETs, resistors, and capacitors

Mustang Tail Lights Santa Barbara, CA
Student Project *May 2023*
- Recreated sequential tail lights that flash incrementally left or right to represent turning, flash together to represent a hazard, brighten to represent an emergency, and dim to represent braking while implementing logic that allows combining these states
- Programmed hardware design in Verilog, simulated the testbench in Modelsim, mapped code to an FPGA with Quartus, and used breadboards, switches, and LEDs to build the enclosure

Annoying Alarm Clock Santa Barbara, CA
Student Project *February 2022-March 2022*
- Built a clock that evaluates an inputted sound at different frequencies and uses them to create custom light and buzzer alarms
- Programmed an Arduino, 3D printed enclosures, and experimented with 4-digit displays, MSGEQ7, and LED matrixes

SKILLS

Technical: Excel; Modelsim; LTSpice; MATLAB | C++; Java; LaTeX; Python; Verilog; RISC-V | CAD
Web Dev with HTML & CSS at *https://robinson.faculty.soc.ucsb.edu/index.shtml* (UCSB Prof. Robinson)
Hobbies: Football (HS Team Captain), Scuba Diving (PADI Certified), Surfing, Car Modification, Piano (CM, Advanced Level)