

Loren Ashfield

Computer Engineer at UCSB, 3.93 GPA

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About

I am a rising senior computer engineering student at UCSB. I am passionate about computers and interested in pursuing opportunities in VLSI design and computer architecture. I am proficient with a range of industry standard design, simulation, and verification tools, including Cadence, SPICE, Verilog, and others. I am also experienced in developing full-stack, end-to-end software. Additionally, I have hands-on experience with applying novel AI and machine learning models to industrial applications. I excel at approaching problems with an innovative and analytical mindset, backed by a strong intuition, dedicated work ethic, and vivid eagerness to learn. Most importantly, I thrive in team-based environments, emphasizing communication in my work.

Education

UC Santa Barbara	Santa Barbara, CA
BS, Computer Engineering	2022 - 2026
Newark Academy	Livingston, NJ
High School Diploma	2018 - 2022

Experience

ECE Tutor	UC Santa Barbara	02/2025 - Present
- Working for MESA University Program at UCSB providing one on one tutoring for first-generation and low-income students. - Tutoring Digital Design Principles (ECE 152A)		
Lab Systems Engineer	Yonder Materials	08/2024 - Present
- Creating full-stack software applications to power AI-driven, high-throughput materials discovery. - Working in lab alongside chemistry team, engaging hands on with deliverables and shadowing experienced material researchers. - Designing custom circuits to allow software to work fluidly with high-throughput electrochemistry setup.		
Embedded Systems Research Assistant	Universidad Carlos III de Madrid	06/2024 - 07/2024
- Evaluated the effects of random bit changes on consumer grade microprocessors to determine reliability in New Space applications. - Wrote low footprint benchmarks for ARM Cortex-M and RISC-V embedded processors using explicit register management, testing with and without operating systems. - Prepared the benchmark for irradiation campaigns controlled by an external host, sending data over serial communication to catalog misbehaviors.		
Computer Repair	Freelance	01/2020 - 06/2022
- Provided practical repairs for personal computer devices and peripherals. Performed on-site repairs while talking clients through issues and advising cost-effective solutions. - Gained a practical intuition for working with circuits and working directly with clients.		
Various Summer Jobs	Corolla, NC	2021 - 2023
- Held jobs in the service industry during high school, learning customer service and communication. - Worked in the kitchen, as a food runner, and at the counter.		

Projects

ULTRARAM/2D Integration	Present
Exploring the possibility of fabricating ULTRARAM, a novel memory concept built on III-V materials, on wafers utilizing 2D material substrates.	

32kb SRAM

12/2024

- Designed 32kb SRAM from scratch on Cadence Virtuoso on a 130nm process node.
- Built all necessary circuits to power SRAM array, including precharge circuitry, sense amps, decoders, and more.
- Ran SPICE tests to verify and benchmark SRAM performance, corroborated by hand calculations.

Societies and Honors

Dean's Honors, UCSB, Earned every quarter since matriculation	2022 - 2024
Tau Beta Pi, Member of national engineering honor society	2024
Alpha Tau Omega, Social Chair, coordinated large scale trips and events for social fraternity	2024

Skills

Programming Languages: Python, C/C++, Assembly, Java
Tools and Frameworks: Cadence, LTspice, ModelSim, Quartus, SUE Design Manager, NST (New SPICE Tool), Git, Verilog, SystemVerilog, VHDL, Conda, PyTorch, Linux, Streamlit, PyQT, Docker, Poetry
Languages: English