Xinle (Eric) Song

(310)-869-9560 | erics311@ucla.edu | linkedin.com/in/xinle-song | github.com/EricSongXinLe

Education

University of California, Los Angeles — Los Angeles, CA
Bachelor of Science in Computer Engineering — *Expected June 2027*

- GPA: 3.83
- Selected Coursework: Digital Logic Design, Computer Organization, Data Structures, Software Construction
- John Richard Leffler Scholarship

Technical Skills

Languages: C/C++, Verilog/SystemVerilog, Python, Haskell, JavaScript, HTML/CSS
Developer Tools: Vivado, Quartus, Questa, LTSpice, Fusion 360, GCC, GDB, Git, Bash, Emacs
Technologies: Computer Architecture, FPGA, PCB Design, Embedded Systems, SensorFusion, PID Control

Experience

UCLA Nanosystems Computer Aided Design Lab — Oct. 2024 – Present
Undergraduate Research Assistant

- Set up **TritonPart** and the **chiplet-cost-model** on lab servers to enable future **chip design simulation**.
- Planning to integrate the **chiplet-cost-model** with the **HISIM model** to simulate **size, power, performance, and yield tradeoffs** in chiplet systems.

UCLA Center for Heterogeneous Integration and Performance Scaling — Jan. 2024 – Oct. 2024
Undergraduate Research Assistant

- Adapted the **software driver** for a **FlexTrate LED display** with a new driver chip and 11x11 dimensions.
- Developed a **pixel control algorithm** to display **"UCLA"** across 25 frames per letter.
- Created an **automated testing script** that reduced testing time by **70%**, streamlining pixel-by-pixel activation.

Projects

Digital Audio Visualizer | *System Verilog, RTL Design, FPGA Programming, Git* — Sep. 2024 – Present

- Learning **RTL design** and **digital logic** to develop a project that displays audio frequency levels on a VGA display using **FFT (Fast Fourier Transform)**.
- Gaining hands-on experience with **sequential and combinational logic**, and industry tools like **Quartus**.

LineRacer | *C, PID Control, Low Level Optimization, Git* — Apr. 2024 – June 2024

- Developed race car using **SensorFusion and PID control** to follow a track, achieved **first place** in **15** seconds.
- Introduced a unique **dynamic control algorithm** to selectively activate outer sensors during sharp turns, minimizing distractions — a feature exclusive to our team.
- Developed **IR SensorFusion algorithm** to weight inputs from sensors to improve control during sharp turns.
- Optimized C code, increased processing speed by **50%** through **efficient data types** and **strength reduction**.

Micromouse | *C, PCB/Schematic Design, Circuit Soldering, Git* — Sep. 2023 – June 2024

- Designed, assembled, and programmed a **maze-solving robot** with **Infrared Sensors**.
- Implemented **motor control** with **encoders** and **PID control**, optimized performance by tuning parameters.
- Designed a **2-layer PCB layout** using Fusion 360 and researched components via **SnapEDA**, formulating the **BOM (Bill of Materials)**.
- Collaborated with teammates to **solder and assemble** the PCB, ensuring successful integration with the robot.

Find Your Clubs | *HTML, CSS, React, Node.js, MongoDB, Git* — Apr. 2024 – June 2024

- Led a team to create a **Full-Stack app** to help students find clubs at UCLA.
- Co-developed the backend API for the **Recommender System**, **Smart Search**, and **User Authentication**.
- Designed and optimized **image-fetching logic**, reducing loading time by **20%** to enhance user experience.
- Co-reviewed **pull-requests** and resolved **merge conflicts** to accelerate concurrent development.