Yanru Zhang

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Objective

Electrical Engineering undergraduate with hands-on experience in digital hardware design, FPGA systems, embedded microcontrollers, and hardware debugging through academic and team-based projects. Familiar with simulation, lab-based validation, and cross-disciplinary collaboration. Comfortable learning new tools and working in fast-paced technical environments. Seeking a Summer 2026 Hardware position to contribute to hardware development, testing, and system-level validation.

Education

Georgia Institute of Technology | Atlanta, GA *January 2026 – Present*
Bachelor of Science in Electrical Engineering Expected Graduation, May 2028

University of California, Davis| Davis, CA *August 2024 – December 2025*
Transfer with 69 Credit Hours, GPA 4.00

Skills

Programming: C (proficient), MATLAB, RISC-V assembly, Java (basic)
Hardware: FPGA-based digital systems (FSMs, datapaths, I/O control), Arduino, TI MSP432, oscilloscope, multimeter
Software: Altera Quartus II, LTSpice, Arduino IDE, Linux (Ubuntu)
Professional Organizations: Georgia Tech Society of Women Engineers
Communications: technical documentation, presentations, team-based design reviews, peer tutoring
Languages: English (fluent), Chinese (native)

Experience

Academic Assistance and Tutoring Centers | Davis, CA *October – December 2025*
***Mathematics* and Physics Tutor**
UC Davis AATC provides peer-led academic tutoring and learning support to help students succeed in challenging courses.

- Conducted one-on-one and group drop-in tutoring in physics and mathematics for 10 hours per week.
- Monitored tutees' progress and provided feedback to assess and support academic improvement.

Projects

FPGA Dice Game Digital System | UC Davis *Fall 2025*
Team-based digital design project implementing a dice-based game on FPGA using Quartus.

- Designed a finite state machine to control game flow, including dice rolling, score updates, and win/loss conditions.
- Built combinational and sequential logic blocks for die counting, turn counting, and score processing.
- Implemented BCD score display logic on 7-segment displays and LEDs for real-time visual feedback.
- Verified correct behavior under edge cases such as switch bouncing and simultaneous inputs through debugging LEDs.

Head-Motion Controlled Signal Helmet | UC Davis *Fall 2025*
Team-based engineering project to design a signaling system controlled by head-motion.

- Programmed Arduino to process 3-axis acceleration data and trigger directional signal outputs with reliable real-time response.
- Designed the signal system circuit using an Arduino Uno, accelerometer, and other circuit components.
- Collaborated with a 4-person team to integrate hardware and software components into a functional prototype.

Sound Tracing Robot | UC Davis *Spring 2025*
Collaborative engineering project to design a robot that will move toward the direction of sound.

- Built a sound tracing robot using the TI MSP432 microcontroller, microphones, and analog signal conditioning circuits, including inverting amplifiers and filters.
- Programmed real-time motor motion in Code Composer Studio to drive autonomous motion toward sound sources.
- Verified system behavior by testing robot response under multiple sound source positions and noise conditions.

Relevant Coursework

Programming for Hardware/Software Systems: Linux OS; Assembly Programming; Instruction Set Architecture; Dynamic Allocation
Digital Systems: Combinational logic; Sequential logic; Computer arithmetic; Memory systems; Algorithmic state machine design
Intro to Signal Processing: Discrete-time signals and systems; Fourier transform and frequency analysis; Sampling and digital filters