Jack Shi

San Diego, CA · jackmshi@ucla.edu · (858)-342-7329 · **Portfolio**

Education

University of California Los Angeles — Los Angeles, CA
BS Electrical Engineering — September 2024 – June 2027
GPA: 3.92, Tau Beta Pi, Eta Kappa Nu

- Relevant Coursework: Neural Signal Processing, Signals & Systems, Digital Signal Processing, Semiconductor Physics, Circuit Analysis, Data Structures & Algorithms, Digital Logic Design

Papers

Tang, Liu, Shirazi, Hennessy, **Shi**, Bhamidipati, Nambiar, Luo, Deak, Wang — San Diego, CA
Infant Wearable Project — Under review for ACM CHI 2026 – Barcelona

- Research Output – Submitted a paper for ACM CHI 2026; presented project updates to PhD students and interns at UCSD Design Lab, created user manuals and wiring diagrams in Photoshop, and developed presentation slides explaining hardware and methodology.

Work Experience

University of California San Diego – Design Lab ECE Branch — San Diego, CA
Hardware Engineer - Infant Wearable Project — April 2025 - September 2025

- Integrated System Design – Built a reliable, wearable sensing platform using Raspberry Pi with camera, microphone, and power management board; ensured continuous in-home infant monitoring.
- Hardware Development – Soldered and assembled durable circuitry; designed snap-fit enclosures in Fusion 360 to secure components safely on a moving infant, with emphasis on robustness, comfort, and long-term reliability. Refined design through sensor placement testing for stable infant use.

San Diego State University – ECE Department *GitHub Link* — San Diego, CA
Hardware Engineer - Waveform Generator GUI Project — May 2023 - August 2023

- MATLAB Programming – Engineered MATLAB software for Windows to interface with waveform generators, enabling automated control & data acquisition.
- Oscilloscope & Waveform Generator Operation – Hands-on experience configuring & troubleshooting waveform signals for electrical testing & research applications.

Featured Projects

Dining Buddy Smart Keychain Project *GitHub* — May 2025 – October 2025

- Designed & printed PCB for a portable ESP32-C3 device, featuring an OLED screen & button.
- Implemented Wi-Fi to fetch dining hall menus & live weather, with deep sleep for low power usage.
- Modeled & printed custom themed enclosures featuring a screwless snap-fit design for tool-free assembly.

IEEE at UCLA – Digital Design, Architecture, and Verification (DAV) — October 2025 – Present

- Designing FPGA-based digital systems using Verilog, focusing on sequential logic, communication protocols, and graphics controllers.
- Collaborating with peers to design and prototype a custom FPGA-based game console featuring external input peripherals, VGA video output, and real-time game logic.
- Verifying Verilog through simulation, timing analysis, and synthesis to ensure stable performance.

FFT Biometric Door Lock *GitHub Link* — February 2025 - March 2025

- Created a wearable microcontroller that generates a unique FFT signature for biometric door unlocking.
- Designed an ESP32-based signal analyzer using DAC-generated signals & ADC for FFT analysis.

Game Console Restoration Project — April 2025 – September 2025

- Hardware Restoration – Refurbished over 10 Game Boy & DS consoles, performing micro soldering, capacitor replacements, & LCD/power circuit repairs using aftermarket parts.

Skills

- **Programming Languages:** C++, MATLAB, Python, JavaScript, Java, Verilog, SQL, HTML
- **Software Tools:** Kicad, Fusion360, Vivado, LTspice, Microsoft Visio, Photoshop, React Native
- **Hardware Platforms:** ESP32, Raspberry Pi, Arduino, FPGA (Xilinx),