# Jack Shi

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

## Education

**University of California Los Angeles** — Los Angeles, CA
BS Electrical Engineering *GPA: 3.92* — September 2024 - June 2027

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

## Papers

**Shi, J.**, Liu N., Wang Y. — 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
*Infant Wearable Project* — April 2025 - Present

- 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* — San Diego, CA
*Research Assistant - 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.

**University of California San Diego – ECE Department** — San Diego, CA
*Full Stack Development Intern* — May 2023 - August 2023

- Full-Stack Web Development – Implemented & debugged React Native frontend & JavaScript/PostgreSQL backend for PersonalPT, a machine learning-powered physical therapy app.
- Authentication & Security – Developed a secure user verification system with email-based authentication & access control to protect sensitive patient data.

## Featured Projects

**Dining Buddy Smart Keychain Project** *GitHub* — May 2024 – Present

- 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.

**FFT Biometric Door Lock** *GitHub* — 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 Business** — April 2025 – Present

- Sales & Resale – Repaired & sold 5 restored Game Boy consoles through online platforms, combining technical repair skills with market research & pricing strategy.
- 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, LTspice, Microsoft Visio, Photoshop, React Native