Kevin Chang

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Education

University of California, Los Angeles (UCLA) Expected grad: June 2028
B.S. in Electrical Engineering | GPA: 4.0/4.0 | Dean's Honor List fall quarter 2025
Selected as 1 of 50 students from the incoming cohort for the New Bruin Leadership Academy. On track to graduate early.
Homestead High School - *Valedictorian* | Dual Enrolled at De Anza College

Projects

Full Portfolio: https://www.changchang.me/portfolio.html

Tactile Browser - UCLA IEEE Student Project Initiative (Ongoing)

Building a modular 2D tactile web display that converts HTML layouts into spatially navigable physical maps for blind users, addressing the 1D limitation of screen readers.

- Designed scalable 3×6 modules forming 12×6 and 15×12 bistable-solenoid arrays, where distinct raised keycap configurations (Tetris-like shapes) encode different HTML elements (links, buttons, headers) for rapid spatial recognition.
- Implemented keyboard-matrix scanning, TB6612FNG drivers, 74HC595 SPI expanders, and distributed Arduino Nano control over I2C with a protected 180W power system.
- Developing a browser extension + DOM parser to translate live webpages into real-time tactile actuation.
- Projected cost <$320, which is ~30× cheaper than existing multi-line refreshable braille displays costing $9k+.

Urban Heat Mitigation Planner

Developed a python tool that helps urban planners reduce urban heat islands by processing geospatial raster datasets (e.g., land surface temperature, vegetation cover, albedo) and using a genetic algorithm to optimize placement of greenspace and reflective surfaces for maximum temperature reduction.

Brain Computer Interface

Records and amplifies alpha brainwaves from EEG signals using multi-stage op-amp amplification with analog high-pass and low-pass filtering to isolate the 8–12 Hz alpha band. Identifies the user in focused and unfocused states.

Experience

UCLA Emergence of Communication Lab - PCB Design Intern 2026

Collaborated with a team of 4 to design NSF-funded wearable infant sensing prototypes capturing synchronized audiovisual data to study early speech development. Helped develop a 4-layer PCB and debug ESP-IDF firmware integrating ESP32-S3 with OV2640, ICS-43434, OLED, and transduction microphones for synchronized real-time audiovisual logging to SD over 4-bit SDMMC, including battery-safe buck/boost power design and RTOS-based peripheral coordination.

UCSB - Researcher 2023

Participated in Summer Research Academies and gained lab experience in neuroscience. Co-authored paper: "The Role of the Hippocampus in Context-dependent Decision Making and Continual Learning."

International Youth Neuroscience Association - U.S. Western Lead 2023 - 2025

Oversaw 30+ chapters in California, Oregon, Washington, Nevada, Idaho, and Arizona. Coordinated events, created educational labs, and supported chapter growth. Led Glendora High (USA011) to become the top chapter nationwide.

Distinctions

MakeMIT x Harvard - 2nd Place 2026

Won 2nd place at MakeMIT x Harvard's entertainment track (6 tracks total), the largest hardware hackathon in the US with 400+ participants. Collaborated with a team to build a volumetric display by rotating an led matrix at high speeds, creating persistence of vision.

Github x Hack Club Undercity Hackathon - 1st Place 2025

Won 1st out of 160 participants at the world's largest teen hardware hackathon hosted by Github and Hack Club. Built an automatic toilet paper folder that dispenses and folds toilet paper using 2 stepper motors.

Presidential Volunteer Service Award Teen Gold 2022

Scholastic Art and Writing Awards - Gold Key + HM 2023/2024

Chinese American Citizens Alliance National Essay Contest - Top 10 2025

Skills

Hardware: PCB Design (Kicad, EasyEDA), CAD (Fusion360, Onshape), Embedded Systems (C/C++, I2C, SPI), Power Management | Programming: Python, Java, R, HTML/CSS, JavaScript