

## Ryan Kim

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### Education

#### University of California, Los Angeles

Computer Engineering B.S.—2nd Year (3.9 GPA)

December 2028

### Experience

#### Bruin Supermileage

Los Angeles, CA

#### Data Acquisition Lead (May 2025– ), Electrical Subteam

February 2025 – Present

- (Ongoing) CAN driver development with STM32Cube IDE for sensor communication and car telemetry
- Research, design and draft project proposals for new sensors to integrate into car system
- Migrate existing sensor software from the Arduino-style RP2040 to the STM32
- Mentor members in the principles of embedded systems; support them through project development
- Review RP2040 datasheets and program Arduino logic onto PCB to monitor power consumption of low voltage system of car

#### YearbookPro

Remote

#### Web Development Engineer

February 2025 – September 2025

- Startup developing novel start-to-end affordable online yearbook creation and distribution platform
- UI/UX design and component design of frontend with SvelteKit for routing and Tailwind for design
- API and features integration using TypeScript and Svelte

### Projects

#### ESP32 Karaoke Machine

June 2025 – August 2025

- Plan, design, find components for, breadboard and program ESP32-based karaoke machine
- Create block diagrams and schematics in KiCad for clear documentation and project planning
- Reference hardware datasheets to verify basic functional requirements and understand timing logic and pinout functions for debugging purposes during development
- Develop and debug with ESP-IDF framework using Platform.io, writing modular code in libraries
- Work with APIs for ADC, I2S, and Bluetooth A2DP for clear microphone passthrough and backing track playback. Learn more: <https://tinyurl.com/esp32karaoke>

#### OPS (UCLA IEEE)

October 2024 – May 2025

- Built Tic-Tac-Toe game using Arduino, OLED and joystick controller connected over UART
- Make several other projects throughout the year involving circuit analysis and breadboarding

### Leadership and Activities

#### PioneerHacks

Sunnyvale, CA

#### Head Organizer (2024), Head of Technology (2022-2023)

March 2022 – May 2024

- Grew PioneerHacks V as Head Organizer by ~100% to 170+ participants and 40+ teams (compared to PHIV year-over-year)
- Work with companies such as Juniper Networks for event logistics at Aspiration Dome, involving sponsorship coordination, judge/mentor outreach, event promotion, budgeting and team leadership
- Developed hackathon PioneerHacks promotional website; manage Devpost page, hacker resources, and project verification; create judging algorithm/tableau and coordinate remote infrastructure

### Skills

**Software** C, C++, Python, Java, git, command line, ESP-IDF, Platform.io, FreeRTOS

**Hardware** ADC, I2S, Bluetooth A2DP, Arduino, breadboard, circuit design, KiCad, LTSpice, oscilloscopes, soldering

**Relevant Coursework** Digital Logic Design, Assembly & Operating Systems, Intro to EE (Circuits, Lab Skills), Object Oriented Programming, Data Structures & Algorithms, Physics E&M, Physics Optics

**Fullstack** HTML/CSS, TypeScript, Tailwind, nodeJS, Express, React, Astro, Svelte(Kit), Firebase