Justin I. Hwang

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Objective

I am a Computer Engineering major with strong verbal communication skills and a particular interest in low-level optimization. I lead the low-voltage electronics and firmware subteams at HyTech Racing, where we design, manufacture, program, and race a record-breaking EV racecar. I take pride in the work I produce, and I love working alongside people who feel the same way. Looking for an embedded systems or computer architecture **Internship for Summer/Fall 2025**.

Education

Georgia Institute of Technology | Atlanta, GA *Aug 2023– Present*
Bachelor of Science in Computer Engineering, GPA 4.00 Expected Graduation **Dec 2026**

Experience

Telsa Motors | Firmware Integration Intern | Palo Alto, CA *May 2025 – Dec 2025* ***(8 mo)***
Electric Vehicle Design and Manufacturing Company

- Validate firmware in manufacturing through integration and release of new firmware versions.
- Design and execute system-level integration tests involving electrical and software systems.

HyTech Racing | Low Voltage and Firmware Lead | Atlanta, GA *Aug 2023 – Present* ***(2 yr)***
Formula SAE Electric Team

- Design schematics, rapidly prototype, and program PCBs for HyTech's 2025 EV race car using Altium Designer and C++.
- Wrote firmware system integration tests to verify functionality of vehicle electrical systems and battery management.
- Program C++ (PlatformIO) to communicate over Ethernet, CAN, SPI, I2C, and UART with a distinct hardware abstraction layer.
- Wrote UART driver for VectorNAV IMU to receive, unpack, and store
- Created one-semester electrical training curriculum to improve new member retention and productivity by 200%.
- Enforced test-driven development practices within electrical and vehicle firmware team.

Teaching Assistant | Programming for HW and SW systems | Atlanta, GA *Dec 2023 – Present* ***(1.5 yr)***
Georgia Tech ECE Department, Georgia Tech College of Computing

- Teach students single-cycle datapath, RISC-V assembly, C programming, and memory management.
- Recruited by professor for writing extensive JUnit-style software verification files on the class forum.
- Overhauled recitation slides for Fall 2024 to include black-box abstraction and follow consistent teaching principles..

Projects

Assembly Optimization (MIPS) *Nov 2024* ***(1 mo)***

- Implemented a search algorithm in MIPS assembly and optimized to 300% of the efficiency benchmark.
- Used concepts from discrete mathematics, algorithms, and binary arithmetic to write the fastest code out of 300+ students.

Test Automation for Data Structures and Algorithms *Aug 2023 – May 2024* ***(1 yr)***

- Published weekly tester files on class forums with custom JUnit-style test infrastructure.
- Achieved 4,000+ downloads across all homework assignments with over 1,200 test cases.
- Used brute-force and automated tests to check data structures and visualize them with ASCII.
- Programmatically tested File I/O, infinite loops, and performed time complexity analysis with multithreading.

Coursework

Computer Architecture, Systems, and Concurrency | Signal Processing | Programming for Hardware & Software Systems | Circuit Analysis | Digital Design Lab | Digital Systems Design | Data Structures & Algorithms | Discrete Mathematics

Skills

Programming: RISC-V | MIPS | Verilog | Java | VHDL | C | C++ | PlatformIO | LaTeX | Python
Software: Altium Designer | Quartus | Emacs | IntelliJ | VSCode | Arduino IDE | Git | MacOS | Windows | Linux
Hardware: Oscilloscope | Logic analyzer | Electrical benchtop equipment