Justin I. Hwang

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Objective

I am a second-year Computer Engineering major with strong leadership 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 software or digital design **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 **May 2026**

Experience

HyTech Racing | Low Voltage and Firmware Lead | Atlanta, GA   *Aug 2023 – Present **(2 yr)***
Formula SAE Electric Team
- Design, manufacture, and program PCBs for HyTech's 2025 EV race car using Altium Designer and C++.
- Wrote firmware integration tests to verify functionality of vehicle controller PCBs.
- Program C++ (PlatformIO) to communicate over Ethernet, CAN, SPI, I2C, and UART with a distinct hardware abstraction layer.
- Overhauled the electrical team training to use guided asynchronous materials to improve member retention.

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.

Covrick LLC | Senior Inventory Analyst | San Jose, CA   *May 2021 – July 2023 **(3 yrs)***
E-commerce seller on Amazon and EBay.
- Shipped 10,000 items totaling $90,000 in revenue, selecting prices to maximize profit while minimizing time to sell.
- Wrote keyword-optimized Amazon product pages to maximize customer traffic based on market research of similar products.

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.

Software Verification for Data Structures and Algorithms   *Aug 2023 – May 2024 **(1 yr)***
- Published 18 JUnit-style tester files on the Object-Oriented Programming and Data Structures & Algorithms class forums.
- Achieved 4,000+ downloads across all homework assignments with over 1,200 test cases.
- Used brute-force and randomization to check data structures and visualize them with ASCII.
- Programmatically tested File I/O, infinite loops, and performed time complexity analysis with multithreading.

Minecraft Computers   *Dec 2023 - Present **(1 yr)***
- Designed and built a Turing-complete computer from the RTL level using Minecraft's in-game circuit simulator.
- Built 7-segment displays, 16-bit adders, binary decoders, multiplexers, and other digital components from the transistor layer.

Coursework

Computer Architecture, Systems, and Concurrency | VLSI & Advanced Digital Design | 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: Arduino | Multimeter | Power Supply | Soldering iron