

Justin I. Hwang

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Objective

Computer Engineering major with concentrations in Computer Architecture and Robotics & Autonomous Systems. Strengths include software verification, circuit design, and teaching. Looking for a digital design, formal verification, software engineering, or firmware engineering **Internship/Co-Op starting Spring or Summer 2025**.

Education

Georgia Institute of Technology | Atlanta, GA

Bachelor of Science in Computer Engineering, GPA 4.00
Minor in Korean Language

Aug 2023– Present

Expected Graduation **May 2027**

Expected Completion Dec 2024

Experience

HyTech Racing | Low Voltage and Firmware Lead | Atlanta, GA

Aug 2023 – Present **(1 year)**

Formula SAE Electric Team

- Design, manufacture, and program PCBs for HyTech's 2025 EV race car using Altium Designer and C++.
- Program C++ (PlatformIO) to communicate over Ethernet, CAN, SPI, and UART.
- Rewrote firmware in PlatformIO with a unit-testing framework to replace the Arduino IDE codebase.
- Overhauled the electrical team training to use guided asynchronous materials to improve member retention.
- Developed SoC estimation code to initialize and integrate state of charge based on analog sensor data.
- Wrote firmware to communicate with VectorNAV IMU through its binary interface and send formatted CAN frames.

Teaching Assistant | Object-Oriented Programming | Atlanta, GA

Dec 2023 – Present **(9 mos)**

Georgia Tech College of Computing

- 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.
- Led weekly recitations, wrote auto-grader tests, held office hours, graded homework assignments and exams.

Covrick LLC | Senior Inventory Analyst | San Jose, CA

May 2021 – July 2023 **(3 years)**

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.
- Trained 5 new employees. Wrote a portion of the employee handbook.

Projects

Software Verification for Data Structures and Algorithms

Aug 2023 – May 2024 **(9 mos)**

- 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 Java Reflections and method annotations to brute-force check data structures and visualize them with ASCII.
- Tested Console IO, File IO, Exception handling, private method/field testing, and loop overrun timeouts with multithreading.

Minecraft Plugins / Redstone Computers

2019 – Present **(4 yr)**

- Programmed Java plugins for Minecraft servers using Spigot/Bukkit API, including ID verification, server security, and games.
- Built Minecraft representations of digital systems, including logic gates, combinational circuits, and 7-segment displays.

Coursework

Programming for Hardware & Software Systems, Circuit Analysis, Digital Design Lab, Differential Equations, Digital Systems Design, Data Structures & Algorithms, Physics Electricity & Magnetism, Discrete Math.

Skills

Programming: Java (Reflections, JavaFX, Javadocs, Gradle) | C | C++ | PlatformIO | LaTeX | Python | Flutter

Software: Altium Designer | Autodesk EAGLE | Emacs | IntelliJ | VSCode | Arduino IDE | Git | MacOS | Windows | Linux

Hardware: Arduino | Multimeter | Power Supply | Soldering iron