

Brandon Luo

(425) 678-5021 | brandonluo@gatech.edu | linkedin.com/in/brandon-t-luo | US Citizen

EDUCATION

Georgia Institute of Technology | Electrical Engineering B.S. | 4.0 GPA

Expected Graduation: May 2028

Stamps President's Scholar

- Selected as the **top 0.01% of Georgia Tech** (1 of 50 scholars) and awarded a **full-ride merit scholarship**
- Relevant coursework: ECE2040 Circuit Analysis, ECE 2020 Digital Design, ECE2035 Programming HW/SW System

INTERNSHIPS

BETA Technologies | Flight Computer and Controls

May 2026 – August 2026

PCB Design Intern

- Designed and laid out **galvanically isolated** dissimilar flight computer modules (Angle of Attack sensors, Weight on Wheels sensors, and Ethernet/CANFD/RS-422/ARINC 429 transceivers) in Altium and KiCad
- Analyzed PHY specifications and characteristic impedances to design a functioning **gigabit Ethernet** transceiver circuit
- Ran **LTspice Monte Carlo simulations** to analyze component drift and RSS worst-case tolerances
- Designed an **interface board** to test flight computers and avionics units: AHRS, Garmin displays, Speedgoat test racks
- Ensured AOA **sensor accuracy to $\pm 0.2^\circ$** across -40°C to 120°C by using **unity gain buffers and RC filters**
- Built a high-side overcurrent protection circuit for an AOA sensor, achieving a three-microsecond shutdown time
- Wrote and released **PCB fabrication/assembly drawings** for battery pack components, submitted to FAA certification

SpaceX | Starlink Avionics

January 2026 – April 2026

Avionics Engineering Intern

- Designed/routed copper and fiber optic harnesses for power and data using **Siemens NX** on a fast-paced timeline
- Validated high-voltage PCBs** for flight readiness via in-circuit and functional load testing, establishing tolerances
- Engineered an **automated micron-accurate machine** for fiber optic termination using LabVIEW, .NET/C# and RS-232.
- Achieved a rapid 4-minute fiber termination cycle time (**3x production efficiency increase**) by implementing **custom edge detection algorithms** and a dedicated GUI

INVOLVEMENTS

Battery Management RE | Yellow Jacket Space Program | Georgia Institute of Technology

August 2025 – Present

The Yellow Jacket Space Program builds, tests, and launches liquid rockets with the goal of reaching space in May 2026

- Battery Management System RE** – lead engineer for power distribution and management to all onboard systems
- Implemented **load switches** and **active cell balancing** to safely manage battery and umbilical power sources
- Conducted extensive field integration and testing, troubleshooting continuity faults and signal integrity issues
- Hardware in the Loop** project: building circuitry to test avionics systems against edge cases, before fires and launches
- Significant work with sensors including **RTDs, pressure transducers, TCs, NTCs, load cells, and vibration sensors**

Peer Instructor | The Hive Makerspace | Georgia Institute of Technology

February 2026 – Present

The Hive is an EE makerspace for students. It contains benchtop instruments, PCB manufacturing machines, and 3D printers

- Certified in the advanced operation of **benchtop instruments** (oscilloscopes, waveform generators, power supplies)
- Guided students in the use of PCB manufacturing machines, laser cutters, and bench instruments for their projects

PERSONAL PROJECTS

Thrust Vectoring Monocopter Drone

June 2025 – February 2026

- Wrote a **PID control system** using **IMU feedback** to counter angular momentum for dynamic attitude stabilization
- C++, Teensy 4.0, MPU6050**, HC-05 Bluetooth module, RS2205 motor, 4s lipo battery, servos, custom 3D printed parts

Active Control Airbrake Rocket

June 2024 – May 2025

- Designed, wired, coded, and 3D printed all parts (CircuitPython, Adafruit Feather Sense, 9g servos, 3.7V lipo battery)
- Achieved **± 10 feet accuracy** of the target altitude (820 feet) by actively actuating drag flips according to PID algorithm

SKILLS

- Circuitry: Ethernet, I2C, SPI, UART, ARINC, mixed signal
- PCB design and fabrication (Altium, LTspice, KiCad)

- RISC-V, Python, Git, Java, C++, LabVIEW, MATLAB
- CAD (NX, Onshape, Fusion, OpenRocket) and 3D printing