

# Hongyi Lyu

Atlanta, GA 30332 | 404-703-9780 | hlyu68@gatech.edu | linkedin.com/in/lyu-hongyi | career.purticra.icu

## OBJECTIVE

Electrical Engineering sophomore passionate about transforming creative hardware concepts into functional prototypes. Comfortable working across the full design cycle — from schematic capture and PCB layout to firmware development, mechanical enclosure design, and acoustic characterization. Equally effective in independent research and fast-paced collaborative environments.

**Seeking undergraduate research or internship opportunities in embedded systems, electronic design, or mechatronics for Summer / Fall 2026.**

## EDUCATION

### Georgia Institute of Technology

B.S. Electrical Engineering | GPA: 4.00

Atlanta, GA

Aug 2025 – Present (Expected May 2028)

## SKILLS

**Electronics:** PCB design (Altium Designer, Altium 365, LCEA), Embedded systems (STM32, ESP32, Arduino), Ansys HFSS

**Manufacture:** 3D printing (FDM, SLA), Silicone molding, Circuit soldering, Laser cutting, Mechanical assembly

**Software:** Autodesk Fusion 360, SIMULIA Abaqus FEA

**Programming:** C/C++, Python, MATLAB, Java

**Instrumentation:** VNA, Oscilloscope, Multimeter

**Languages:** Native Chinese, Fluent English

## EXPERIENCE

### Georgia Tech School of Music — Lab for Interaction and Immersion (L42i)

Jan 2026 – Present

*Undergraduate Researcher — VIP: Interacting with Sound and Space*

- Contributing to BONG Mk. III, transforming a digital brass-inspired controller into a self-contained instrument with onboard Daisy Seed synthesis, amplification, and spatial interaction capabilities.
- Designed PCB schematic modifications in EasyEDA, including rotary encoder replacement and corrective wiring for the microphone amplifier stage.
- Performed DRC verification, applied copper pour (GND plane) and teardrop features; coordinated board submission to JLCPCB.
- Prototyped speaker bell enclosures via FDM 3D printing; prepared DXF files for laser-cut stacked-ring plywood fabrication.
- Co-authoring a semester paper documenting PCB design practices, bell acoustics research, and manufacturing workflows.

### Shanghai Huatai Automation Co., Ltd

Jul 2025

*Student Intern — Mechanical & Electrical Design*

- Developed an imitation learning gripper providing innovative solutions for traditional manufacturing processes.
- Designed end joint control circuits using LCEA; completed both “pluck wheel” and “two-stage button” configurations.
- Modified mechanical structure and designed a modular camera bracket in Fusion 360.
- Manufactured prototype parts via 3D printing and assembled components, ensuring precise fit.

### Ningbo University — Intelligent Wireless Technology Lab

Jul – Aug 2024

*Intern Researcher*

- Designed and fabricated SIW microwave bandpass filters with high Q-factor and low insertion loss.
- Built prototypes on FR4 and Rogers substrates, modeled in Fusion 360, and optimized using Ansys HFSS.
- Validated performance with a vector network analyzer; measured data closely matched simulation results.

## PROJECTS

### YJSP Avionics Sensor & Valve Controller PCB

Aug 2025 – Present

*Yellow Jacket Space Program — Avionics Hardware Designer*

- Designed a 2-layer PCB in Altium Designer integrating STM32H573 MCU with ADS114S06 ADC for four-wire PT100 RTD temperature measurement.
- Implemented 24V power regulation (Buck converter + LDO), INA228 current monitoring, PCF8575 GPIO expansion, and relay driving.
- Iterated schematic and layout through team design reviews; transplanted components for Altium library integration.

### Design & Manufacture of Bionic Frog Robot

Dec 2022 – May 2024

*East China Normal University — Student Developer*

- Designed a water-surface robot using pneumatic flexible joint actuators with Fusion 360 and ABAQUS FEA simulation.
- Built biomimetic robot with Arduino-based wireless control; showcased at ISEF 2024 in Los Angeles.

## ACTIVITIES

### GT IEEE Robotech Hackathon — First Place Winner (Team TachyAstroach)

Jan 2026

Chief mechanical designer of parent-subunit moon surface rover *MoonLine*.

### Inventure Prize 2026 — $\mu$ CHIMERA: Multimodal Nano-power Gathering Device

Jan 2026

Designer of PZT nano-power generating module & overall mechanical designer.

### RoboRambler — Georgia Tech RoboMaster Robotics Club, Electrical Dept.

Spring 2026 – Present

### Hive Makerspace — Peer Instructor (3D printing, laser cutting, electronics)

Fall 2026

### HyTech Racing — Electrical Control Department

Aug – Dec 2025