Hongyi Lyu

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Objective

Electrical Engineering student with abundant teamwork and rapid-prototyping experience, skilled in developing creative solutions to engineering problems. Experienced in both research-oriented and developmental scenarios specializing in robotics prototyping and signal processing. Possesses strong mechanical prototyping background through hackathon-winning projects.
Seeking an internship in mechatronics / product prototyping for Summer / Fall 2026.

Education

Georgia Institute of Technology | Atlanta, GA *Aug 2025 – Present*
Bachelor of Science in Electrical Engineering | GPA: 4.00 *Expected Graduation: May 2028*

Skills

Manufacture: 3D printing, Silicone modeling, Circuit soldering, Laser cutting, General mechanical assembly
Instrumentation: Vector Network Analyzer, Oscilloscope
Electronics: PCB design, Embedded system design, Ansys HFSS toolkit
Digital Design: Autodesk Fusion 360 (Mechanical Design, Animation, Simulation), SIMULIA Abacus Finite Element Analysis
Programming: C++, Python, Java
Languages: Native Chinese, Fluent English

Experience

Shanghai Huatai Automation Co., Ltd, Shanghai, China *Jul 2025*
Student Intern — Mechanical & Electrical Design

- Developed an imitation learning gripper that provided innovative solutions for traditional manufacturing processes.
- Designed the control method for the end joint using LCEDA, completed both "pluck wheel" and "two-stage button" configurations.
- Modified the mechanical structure in Fusion 360 to accommodate electrical components and enhance manual compatibility.
- Designed a modular, lightweight camera bracket for the gripper head using Fusion 360.
- Manufactured prototype parts via 3D printing and performed assembly, ensuring precise fit of screws, bearings, and printed components.

Ningbo University, Ningbo, China *Jul 2024 – Aug 2024*
Intern Researcher — Intelligent Wireless Technology Lab

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

Projects

Design & Manufacture of Bionic Frog Robot, School of Physics, East China Normal University (ECNU) *Dec 2022 – May 2024*
Student Developer

- Individual guided project to design a water-surface robot using pneumatic flexible joint actuators.
- Built biomimetic robot with Fusion 360 modeling and Arduino-based control.
- Validated wireless sensing and maneuvering performance; showcased project 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 — *μCHIMERA: Multimodal Nano-power Gathering Stackable Device* *Jan 2026*
Designer of PZT nano-power generating module & overall mechanical designer.

Hytech Racing — *Electrical Control Department* *Aug 2025 – Present*
General Electrical Engineer