Song Yue D. Li

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Objective

Electrical Engineer pursuing a minor in Computer Science & AI with experience in Firmware, CAN/Ethernet Interfaces, PCB design, CAD, and mechatronics. Looking for internship with an innovative atmosphere, team-driven culture, and interdisciplinary projects.

Education

Georgia Institute of Technology | Atlanta, GA
Bachelor of Science in Electrical Engineering | Honors Program — Expected Graduation: May 2027
Upcoming Coursework: Digital Design Lab, Introduction to Signal Processing, Programming for HW/SW Systems, Introduction to AI

Skills

Certifications: Altium PCB Design, Certified SolidWorks Expert (CSWE), CSWA-Electrical
Software: Altium, KiCAD, PlatformIO, CATIA, SolidWorks, AutoCAD, VSCode, GitHub, Microsoft (Word, Teams, PowerPoint, Excel)
Programming: Java, C++ (proficient), Python, JavaScript, MATLAB (beginner)
Hardware: NI myDAQ, Raspberry Pi, Arduino, NI RoboRio
Machining: 3D-printers (Markforged & Prusa), CNC-Router, Lathe, Laser-cutter (GlowForge & Thunder Reci), Arbor Press, Grinder
Professional Organizations: Georgia Tech HyTech Racing, Georgia Tech RoboJackets-Battle Bots, Georgia Tech IEEE, FIRST Robotics
Languages: English (native), Chinese (fluent), Spanish (conversational)

Experience

Hytech Racing | Atlanta, Georgia — *August 2024 – Present*
LV Electronics Controls and Firmware / Formula SAE Electric
- Programming in C++ with PlatformIO to write firmware for CAN-Ethernet hybrid-interface for BMS connected by IsoSPI protocol
- Presenting high-end system diagrams for documentation of low-end integration of LTC6811 ICs for reliable battery cell balancing
- Improving skills in PCB and circuit design on Altium for upcoming an Ethernet network replacing past CAN system

RoboJackets | Atlanta, Georgia — *September 2024 – Present*
Firmware and Design / Battle Bots
- Cultivating electrical skills in weekly firmware projects on Arduino IDE, circuit prototyping, and KiCAD PCB layout/schematic labs
- Growing CAD skills on Inventor & AutoCAD and integrating autonomous attack maneuvers on 3lb. competition robot

National Aeronautics and Space Administration (NASA) | Houston, Texas — *June – August 2024*
Robotics Intern / ER4
- Designed physical interface to update Edge-key Dashboards on lunar rovers for high brightness and accessible electronics
- Manufactured 4 custom CF fenders with flexible spines for Lunar Terrain Vehicle (LTV) wheel modules in JSC's shop buildings

Research

Vertically Integrated Project (VIP) | Atlanta, Georgia — *August 2024 – Present*
Flow Dynamics of Soft Robotics Swimmers / Environmental Fluid Mechanics Lab
- Collaborating on multidisciplinary team to design and fabricate soft aquatic robots actuated by dielectric elastomers
- Conducting CFDs on silicon and PDMS prototypes of soft robots to visualize thrust and turbulent boundary layers in cephalopods
- Equipping soft robotic membranes with electromagnetic and chemical sensors for data collection in aquatic environments

Canine Bot | FIRST Robotics — *Summer 2023*
- Budgeted $2000 to build and program a RC robot dog using SolidWorks, CNC machining, and multithreaded command control

Strategy Optimization in a Robot Race Using PID | UT Austin Summer Robotics Program — *Summer 2022*
- Published JSR paper covering optimization of PID equations for a line-tracking robot simulation in ROS

Relevant Coursework

ECE Digital System Design: Combinational/sequential logic design, Boolean algebra, circuit optimization, and finite state machines
Differential Equations: Solve various types of differential equations, apply numerical methods, understand dynamical systems
CS Data Structures and Algorithms: Analyze performance and optimizations in data structures to solve computational problems

Leadership

FIRST Robotics Competition (FRC) 2468 Team Appreciate | Captain, Lead Designer, Human Player — *May 2023 – May 2024*
- Led design and strategy of competitive/offseason robots that were represented at 5 competitions
- Initiated R&D of CAN Distribution Boards, TPU printed Swerve Wheels, Silicon-molded components & rapid-prototyping intakes