Agastya Kalagarla

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Education

Georgia Institute of Technology — Stamps Scholars
Bachelor of Science in Computer Engineering, Minor in Mathematics — ***GPA: 4.0***—*Grad: Dec 2026*

Technical Skills

Programming: Python, C++, Java, VHDL, Verliog, Javascript, SQL, MATLAB, AI/ML, Git
Hardware: Altium, LabVIEW, FPGA, Digital Signal Processing, Circuit Design, Fusion 360
Relevant Coursework: Data Structures & Algo, CS Discrete Math, Prog HW/SW Systems, Java Object Oriented Programming, Digital Design Lab, Circuit Analysis, Differential Equations, Linear Algebra

Projects

Electric Racecar Battery Cell Modeling | *Python, PyTorch, MATLAB, ML* — Oct 2024
- Researched and implemented a deep neural network architecture to perdict values of Li-Ion Battery Health and an Extended Kalman Filter to linearize data for monitoring Live Charge under heavy load conditions.
- Processed 76k data points. Generated equations to model cycle vs SOH, deployed on Teensy 4.1

RL Agent - Stock Portfolio Optimizer | *Reinforcement Learning, Python, Gym, TensorFlow* — Dec 2024
- Developed a Proximal Policy Optimization (PPO) agent and a custom Gym env with financial indicators (RSI, Closing, SMA) for reward, penalized volatility. Beat equal distribution by 2.5x

CNN for Wetland Construction | *Computer Vision, Python, Pytorch* — Mar 2024
- Designed a Convolutional Neural Network with ResNET to predict the safety of wetland construction. Evaluated soil color and water presence; Achieved 92% accuracy against training dataset.

Experience

Rivian and Volkswagen Technologies — Feb 2025 - Present
Incoming Software Engineering Intern | C++, Embedded Systems, C — *Palo Alto, CA*
- Embedded Systems: Summer 2025 Software Engineering Intern on the Embedded Systems team working on software development for next-gen architectures and power management at Rivian and Volkswagen Technologies

HyTech Racing - Georgia Tech Formula SAE EV — Aug 2024 - Present
Electrical Subteam Member | *Altium, C++, Circuit Design, Catia, Python, MATLAB, Git* — *Atlanta, GA*
- Cell Modeling: Engineered mathematical (EKF) and ML models (DL) to determine critical battery characteristics
- Firmware Development: Developed the Pedal System Firmware in C++, implementing ADC, Safety, and CAN.
- PCB Design with Altium: Designed various Tractive System and Charge Control Unit Components

Intelligent Digital Communications - Georgia Tech Vertically Integrated Projects — Aug 2024 - Present
ML/DSP/FPGA Subteam | *DSP, FPGA, Verilog, MATLAB, Python, Computer Vision* — *Atlanta, GA*
- Noise Reduction Algorithms: Utilized Linear Programming and ML to predict the optimal boolean function & stack filter to increase signal clarity. Presented to L3 Harris
- Signal Processing: Deployed stack filter to de-noise and grayscale a drone signal, used for speeding up other CNN models for classification. Implemented Digital Signal Processing algorithms on FPGAs with Verilog

NSF REU - Georgia Tech Dynamics Control Systems Laboratory — Sep 2024 - Present
Undergrad Research Assistant | *Altium, C++, ML, Python, Firmware* — *Atlanta, GA*
- Firmware Integration (C++): LiDar integration firmware via Arduino 33 Nano IOT to improve the mini autonomous car. Currently designing firmware to control a TI BQ25703A Charge Control IC
- Custom PCB Design: Designed the full PCB for a mini-autonomous car with Altium, including power electronics, ICs, microcontrollers, and TTL conversion for PWM. Saved $10,000 by using Lidar instead of Visual Tracking

NJ Governor's School of Engineering and Technology — June 2023 - Oct 2023
Research Scholar | *LabView, Altium, Circuit Design, Python, Technical Writing* — *Piscataway, NJ*
- Novel Circuit Development: Created a circuit setup to measure Li-Ion Battery Thermal Conductivity. Utilized LabVIEW + Python for DAQ / Programming. Presented findings at 2023 MIT URTC, accepted IEEE Xplore.

Awards/Certifications

- Georgia Tech Stamps Presidents Scholar Recipient: Full-ride merit based scholarship with 0.17% acceptance.
- IBM - Deep Learning and Reinforcement Learning
- Civil Air Patrol: Cadet Captain + NJ Cadet of the Year - Highest individual award for a cadet in the state of NJ