Ayan Agarwal

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Education

Georgia Institute of Technology Graduation: May 2027

Bachelor of Science in Computer Engineering

- GPA: 4.0/4.0
- Relevant Courses: Design & Analysis of Algorithms, Data Structures & Algorithms, Programming HW/SW Systems, Intro to Artificial Intelligence, Intro to Object Orient Prog, Digital System Design, Objects and Design

Experience

Engineering Intern | *iVue Robotics* August 2023 - Present

- Engineer full-stack web applications for iVue's platforms, developing both frontend and backend components (Vue.js) to create an optimized user experience for web and mobile interfaces
- Facilitated $10,000+ of drone orders through development of new product selection and orders page
- Integrated Cesium API to create custom data visualization layers for real-time drone telemetry

Information Technology Intern | *Fulton County Schools* May 2024 - August 2024

- Executed large-scale reimaging initiative for 10,000+ Windows-based student devices across 100+ schools
- Established proficiency in system imaging, from initial PXE boot through final quality assurance testing
- Collaborated in team structure to manage troubleshooting and ensure proper operation for 100% of devices

Head of Business and Programming | *Storm Robotics* August 2021 - May 2024

- Architected and deployed the robot's core operational software for FIRST Robotics Competition (FRC) using Java
- Enabled precise control and autonomous functionality, while integrating sensor input and input logic
- Instructed a comprehensive technical onboarding curriculum covering Java, Git version control, and hardware fundamentals, scaling the developer team by 100% in one season
- Qualified for FRC World Championship out of 86,000+ other students and 3500+ other teams in FRC globally

Projects

Triage Assist | *Python, Scikit-learn, Streamlit, Groq API, Llama 3.3* February 2025 – Present

- Built a scalable AI-powered triage system integrating Llama 3.3 and a machine learning model trained using Random Forest, SVC, and KNN algorithms with 1200+ data points to assess and prioritize patients
- Engineered a dynamic weighted ensemble technique to optimize model performance; fine-tuned algorithm weights based on feature analysis and medical context, improving predictive accuracy for patient triage recommendations
- Designed a Streamlit-based UI with dynamic color-coded levels, handling for incomplete data, and a login system

Artificial Intelligence | *CS 3600 @ Georgia Tech* May 2025 - July 2025

- Implemented 10 projects throughout semester spanning search algorithms, deep learning, neural networks (CNNs/LLMs), reinforcement learning (MDPs), and probabilistic inference, using Python and PyTorch
- Engineered a quote search system using LLM text embeddings and FAISS for 500K quotes with streamlit UI
- Fine-tuned a pre-trained VGG16 convolutional neural network (CNN) using transfer learning in PyTorch to perform image classification on a dataset of butterflies across 75 classes, achieving 90%+ accuracy
- Solved MDPs via Q-iteration and implemented linear regression with gradient descent to predict home prices

Undergraduate Researcher - Experimental Flight | *VIP @ Georgia Tech* January 2025 – Present

- Engineered a high-performance, asynchronous backend API using FastAPI to ingest, process, and serve real-time telemetry data (e.g., GPS, attitude, battery) from a drone.
- Implemented a WebSocket endpoint to provide a low-latency data stream to live-visualize flight information

Mbed Snake Game | *ECE 2035 @ Georgia Tech* January 2025 – May 2025

- Designed and implemented a fully functional Snake game in C++ integrating mbed microcontroller, uLCD display and tactile switch for real-time user input and rendering, focusing on an optimized user experience
- Performed unit tests to validate 100% operational switch inputs, game logic, and display outputs

Skills

Programming: Python, Java, C, C++, Java Script, CSS, HTML, RISC-V
Software: Git, Github, Django, Hugging Face, PyTorch, NumPy, Vue.js, Scikit-learn, Pandas, Quartus, Microsoft Office
Hardware: ARM mbed microcontroller, NI myDAQ, Raspberry Pi