Ujaan Rakshit

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Education

Georgia Institute of Technology Atlanta, GA

B.S. in Computer Science; GPA: 4.00/4.00 *May 2027*

- Threads: Intelligence & Modeling & Simulation
- Key Coursework: Data Structures & Algorithms, Computer Organization, Object-Oriented Design, Discrete Math

Technical Skills

Languages: Python, C++, Java, JavaScript/TypeScript, Bash, SQL, HTML/CSS
AI/ML & Data: PyTorch, TensorFlow, CLIP, ViT, FAISS, scikit-learn, Pandas, NumPy, OpenCV, ONNX
Systems & Infra: AWS, Docker, Kubernetes, Nix, CMake, GitHub Actions, Linux/Unix
Web/UI: Streamlit, React, Next.js, Node.js, TailwindCSS, Flask, REST APIs
Tools: Git/GitHub, Figma, Jira, Confluence, Slack/Discord

Experience

Software Engineering Intern May 2025 – Aug 2025

Orbitals Learning LLP (Remote)

- Engineered large-scale document layout processing pipelines (50k+ pages) in Python using modular C++ extensions for speed-critical sections, improving throughput by 65%.
- Refactored the training framework with asynchronous data loading, mixed-precision training, and unified logging; cut end-to-end runtime from 10h to 6h.
- Deployed scalable workflows on AWS EC2 with Docker and GitHub Actions, supporting reproducible runs across GPUs.

Undergraduate Researcher – ACT Driving Simulator Aug 2025 – Present

Georgia Institute of Technology

- Implemented distributed simulation infrastructure for 100+ autonomous and human-driven vehicles.
- Developed traffic controllers based on IDM and OVM models, validating multi-agent behavior in congestion tests.
- Integrated LLM-based reasoning modules via REST API layer, improving decision robustness.
- Benchmarked multi-agent workloads and parallel event scheduling, improving simulation throughput by 18%.

Projects

Photo Organizer | *Python, FAISS, CLIP, Streamlit* July 2025

- Designed an end-to-end photo search engine with embedding-based retrieval using FAISS and CLIP.
- Optimized vector indexing and caching for sub-200 ms query latency on 10k+ image datasets.
- Built a modular Streamlit UI supporting natural-language queries, image previews, and batched inference.

TaskWeave | *TypeScript, Node.js, PostgreSQL, Docker, Redis* June 2025 – July 2025

- Built a distributed task orchestration platform supporting concurrent job scheduling, dependency tracking, and failure recovery across multiple worker nodes.
- Designed RESTful APIs and WebSocket endpoints for real-time job monitoring and status updates, reducing client polling overhead by 40%.

JurassIQ (Hacklytics 2025) | *PyTorch, Flask, AWS* Mar 2025

- Developed a backend inference service and REST API for real-time fossil classification using CNN ensembles.
- Optimized GPU inference pipelines via ONNX conversion and batching; deployed on AWS EC2 with ¡1s latency.
- Collaborated in a 4-member team to design data loaders, model validation routines, and the hackathon demo.

Leadership and Team Experience

Software Team Lead Aug 2024 – Present

HyTech Racing (FSAE Electric), Georgia Tech

- Lead 10+ engineers developing telemetry and control software for electric race car; oversaw sprint planning and CI/CD integration.
- Developed a multithreaded C++ telemetry logger for 200 Hz data with <5 ms jitter, enabling real-time lap analytics.
- Architected CAN-based sensor drivers and fault-tolerant data pipelines, raising packet reliability by 45%.
- Standardized internal CMake build system and documentation, reducing onboarding time for new developers by 60%.