Aritra Saha

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EDUCATION

Master of Science: Computer Science 05/2027 | Atlanta, GA
Georgia Institute of Technology
Concentration: Machine Learning | GPA: 4.0

Bachelor of Science: Computer Science 05/2026 | Atlanta, GA
Georgia Institute of Technology
Concentrations: Artificial Intelligence and HCI | GPA: 4.0

PROFESSIONAL EXPERIENCE

Siemens 07/2023 – 05/2024 | Alpharetta, GA
Software Engineering Intern
- Increased Snowflake edit throughput by 80% by building Python and SQL automations for safe DDL generation and bulk updates.
- Cut SAP support costs by $1 million by deploying an Azure chatbot that resolved Tier 1 issues and auto routed tickets via SAP APIs.
- Raised worker throughput by 120% by exposing legacy tasks as REST APIs and shipping a CLI and scripts to remove manual steps.

RESEARCH EXPERIENCE

NVIDIA AI Makerspace Nexus 08/2024 – Present
Project Manager & Data Science Lead
- Improved study workflows for 5,000+ students by building ChatGT, a local LLM platform with dual-mode chat and real-time streaming, enabling fully private, on-device ML assistance.
- Increased quality of auto-generated study materials by 40%+ by designing the ML pipeline for PDF concept extraction, Q&A generation, and adaptive scoring, producing structured flashcard decks for thousands of users.
- Enhanced explainable ML tooling by integrating PCA, t-SNE, and UMAP, enabling scalable visualization and capturing 500+ user feedback responses through a contextual in-app rating system.

Intelligent Transportation Systems and Connected & Autonomous Vehicle Lab 05/2025 – Present
Undergraduate Researcher
- Processed over 100 million BSMs by converting live PCAP to CSV with Scapy, PyShark, and tshark, visualizing in PyDeck and Altair.
- Built anomaly detection and situational awareness dashboards for first responders that reduced emergency decision time by 30%.
- Improved CAV rollout planning for 3+ statewide partners by analyzing multi-terabyte vehicle datasets with Pandas, producing insights that shaped emergency incident playbooks.

Computing Education Research Group, Georgia Tech College of Computing 06/2025 – Present
Head Researcher
- Delivered a Canvas LTI 1.3 app for flashcards and short quizzes, supporting 1,000+ cards across courses by building a Python REST backend with PostgreSQL.
- Matched instructor grading on free-response at over 85% agreement by training an LLM evaluator with rubric-guided prompts and normalization rules.
- Readied a rollout to 5,000+ students by packaging the tool as a Canvas course template and admin install with LTI keys and scopes.
- Hit under 200 ms p95 latency end-to-end by optimizing API endpoints, SQL query plans, and client caching in Python and JS.

LEADERSHIP AND COMMUNITY ENGAGEMENT

The Scholastic Artificial Intelligence League (SAILea) 12/2020 – Present
Executive Director & Board Member
- Organized 6 expert-led AI events on climate, health, work, and ethics. Awarded $10K in grants, reaching a network of over 150K.
- Established board of 7 editors and 2 professors from UNC & Duke. Published, reviewed, and facilitated AI, ML, DL, VR, and CS research papers for 550+ students.
- Developed and launched a platform for resource management and event sign-ups, deploying LLM-powered automated onboarding, Q&A assistants, and content summarization built with Python, React, and LangChain, integrated with Hugging Face models, cutting manual workflows by 40% and boosting engagement by 25% among 2,500+ active members.

PUBLICATIONS

Developing an AI-Enhanced Curriculum for K-12 Programming Education: A Comprehensive and Ethical Approach 12/2024
Georgia Tech Digital Repository, 2024. Under review at *International Journal of Computer Science Education in Schools*.

Interactive Visualization and Classification of CV2X Vehicle Trajectories Using Segmentation, Elevation, and Spatial Analysis 08/2025
Georgia Tech Research (In Progress). Preparing submission to *IEEE Transactions on Intelligent Transportation Systems*.

TECHNICAL SKILLS

Languages & Web: Java, Python, SQL, NoSQL (MongoDB, DynamoDB), JS, React, Node.js, Postgres, HTML/CSS, C, C++, Assembly
AI/ML & Data: TensorFlow, PyTorch, Scikit-learn, Keras, RAG, OpenCV, NumPy, Pandas, Altair, PyDeck, Matplotlib
Dev Tools & Cloud: Git, Docker, Kubernetes, AWS, Azure, VS Code, Jupyter Notebook