Mridul Gupta

484-695-7228 | mgupta358@gatech.edu | linkedin.com/in/mridul-g

EDUCATION

Georgia Institute of Technology — Atlanta, GA

Master of Science in Computer Science (Machine Learning) — *Expected: Dec 2024*
Bachelor of Science in Computer Science (GPA: 3.9, Dean's List, Faculty Honors) — *Expected: Dec 2023*

- **Coursework**: Algorithms Design and Analysis, Data Structures, Computer Systems & Networks, Database Design, Object-Oriented Design, Machine Learning, Computer Vision, Probability & Statistics, Perception & Robotics

EXPERIENCE

BerkOne — Bethlehem, PA

Software Engineering Intern - *Application Infrastructure Group* — *May 2023 – Aug 2023*

- Expedited new hire request by 65% by utilizing Java, C#, ASP .NET, MS SQL Server, Bootstrap, and jQuery to create an Employee Requisition screen, moving from paper to an in-house digital system
- Implemented dynamic feature for multi-group selection across logins, improving resource tracking efficiency by 43%
- Engineered 5 high-performance SPs to facilitate automated email notifications, improving responsiveness to stakeholders
- Achieved a 40% cut in load time by successfully upgrading 3 .NET Nuget applications using Azure DevOps tools
- Decreased the processing time of undelivered emails by 75% by coding 3 new tasks on the In-House distributed task scheduler to automate the generation and FTP-ing of 350+ CSV file reports monthly. Utilized Apache Spark to streamline the processing of large datasets.

Experimental Flights — Atlanta, GA

Software Engineering Team Lead - *Vertically Integrated Program* — *Jan 2022 – Dec 2023*

- Led an 8-person Agile team to develop a full-stack application rendering real-time drone data using AWS, Express.js, Node.js and Docker for containerization to create an isolated environment for testing
- Designed a scalable and reliable system that efficiently manages up to 4 simultaneous ArduPilot simulations in Firebase
- Integrated QGroundControl into a BVLOS system for aerial vehicles, employing Flask API for path planning algorithm
- Implemented an Auto-report and File-reader option in the Battery Management web page using React.js, enabling real-time drone activity status monitoring and analysis

College of Computing @ Georgia Tech — Atlanta, GA

Database Systems & Object-Oriented Programming Teaching Assistant — *Aug 2022 – Present*

- Expanded the question bank by 20% and played a pivotal role in the refinement of the course autograder tests using GitLab
- Crafted 5+ entity-relationship diagrams, constructed 25+ MySQL queries, and implemented comprehensive autograder tests
- Graded and critiqued 350+ student code submissions and provided individualized feedback throughout the semester
- Provided individualized mentorship, including code review, to a group of 40 students by teaching data structures, algorithms and Object-Oriented Programming concepts in Java, leading to a 10% increase in homework average

PROJECTS

Autonomous lane bot | *C++, Arduino, OpenCV*

- Developed a C++ based autonomous lane follower using OpenCV for edge detection, achieving 98% recognition accuracy
- Engineered an ultrasound sensor integration, enhancing obstacle detection and reducing collision rate by 40%
- Implemented a modular system architecture in C++, facilitating seamless component interaction and accelerating development time by 25%

Game Suite Application | *Android Studio, Kotlin, Java, JUnits*

- Created an interactive Android game suit consisting of Chess, Blackjack and Wordle in a collaborative, Agile scrum environment with test driven development
- Led frontend development of main screen UI using Android Studio and integrated Chesslib API in Kotlin
- Produced JUnits edge test-cases for robust testing leading to a 25% improvement in app performance and error handling

Socio-Economic Data Prediction Platform | *Python, Numpy, React, Jupyter, AWS Redshift*

- Trained a neural network model and a Random Forest Regression model to determine socioeconomic development levels of geographic regions based on satellite imagery using TensorFlow and UC Merced dataset
- Utilized GraphQL API to create an interactive choropleth map in React from data produced by the model
- Assembled Jupyter notebook for swift onboarding featuring model instructions, dataset examples, and key Numpy functions

SKILLS & LEADERSHIP

Technologies: Java, Python, C#, C/C++, ASP.NET MVC, AWS, MySQL, React.js, JavaScript, DevOps, REST API, Node.js Express.js, jQuery, Angular.js, SQL Server Management, GraphQL, Docker, Git, PyTorch, Ruby

On-Campus Involvement: Sigma Beta Rho Fraternity (EBP – Chair of Finance), India Club (Board Leader - IT), Big Data Big Impact, GT Agency, Flower Invention Studio, Housing and Residence Life - Resident Assistant