

# Mridul Gupta

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## EDUCATION

### Georgia Institute of Technology — Atlanta, GA

*Master of Science in Computer Science (Machine Learning)*

*Expected: May 2025*

*Bachelor of Science in Computer Science (GPA: 3.88, Dean's List, Faculty Honors)*

*Expected: May 2024*

- **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 Support Group*

*May 2023 – Aug. 2023*

- Expedited new hire request by 65% by utilizing C#, ASP .NET MVC, 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 migrating 3 .NET applications to newer versions of Nuget packages
- 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

### Experimental Flights

Atlanta, GA

*Software Engineering Team Lead - Vertically Integrated Program*

*Jan. 2022 – Present*

- Led an 8-person Agile team to develop a full-stack application rendering real-time drone data using AWS, Express.js, Node.js
- 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 project
- 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

### Better Empirically Established Security Lab @ Georgia Tech

Atlanta, GA

*Authentication Methods Researcher*

*Aug. 2022 – Dec. 2022*

- Designed and implemented a password selection feedback mechanism, aimed at promoting password security and usability
- Tested a predetermined control-group of password combinations on 500+ websites and recorded the feedback message to determine the appropriate password policy being triggered
- Planned a user-study consisting of 11 web-administrator interviews and inferred patterns of password feedback mechanism

## PROJECTS

### 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

- Developed and trained a predictive 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++, CI/CD, ASP.NET, AWS lambda, Kotlin, DevOps, RESTful API, Bootstrap, jQuery, JavaScript, React.js, Angular.js, SQL Server Management, Firebase, PyTorch, Docker, Git, Linux

**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