

TRINAV BHATTACHARYYA

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EDUCATION

Columbia University	New York, NY
MS in Computer Science (Machine Learning Track)	Expected Dec 2026
Supervised ML Models, Probability and Statistics, AI, Algorithms, Security & Cryptography.	
Jadavpur University	Kolkata, India
BE in Computer Science and Engineering, 8.88/10	May 2022
Compilers, Database, Distributed Systems, TCP/IP & Networks, Operating Systems.	

WORK EXPERIENCE

Amazon Web Services	Bengaluru, India
Software Development Engineer II / I	Jun 2022 - Jul 2025
• Collaborated with AWS Aurora's database storage team focusing on durability and availability.	
• Promoted to SDE II (Oct 2024) for ownership of Aurora QA infrastructure and customer-impacting reliability work.	
• Resolved 5 critical Undo code defects in MySQL impacting Netflix and Paytm, leading root-cause analysis and client refunds.	
• Delivered AWS cross-zone replication features in Aurora's Graph database, attracting enterprise clients such as Disney.	
• Built and owned high-throughput validation infrastructure (Java, Bash, PostgreSQL) for distributed, latency-sensitive systems.	
• Led a team of 3 to enhance C++ code and reduce chances of downtime by 15% via intelligent performance anomaly detection.	
• Mentored and evaluated an intern for six months; created user documentation and automated test cases using Generative AI, integrating final code into production to increase availability by 20% through optimized replication.	
• Scrutinized team's annual bill to reduce infrastructure cost by 15% via hardware modernization and removal of unused nodes.	
• Implemented an enhanced Linux script at startup of nodes to extract EC2 metadata leveraging session-token mechanism.	
• Conducted interviews for SDE 1 and intern roles, collaborating with management on evaluation and hiring.	
• Led 3-member hackathon team building an automated kernel upgrade alerting tool reducing downtime.	

Amazon Web Services	Bengaluru, India
Software Development Engineer Intern	Jun 2021 - Jul 2021
• Designed and implemented Java-based tool to collate logs from 100,000+ Aurora nodes, store in DynamoDB, and visualize with a dashboard. Tool integrated into production, leading to full-time offer.	

RESEARCH EXPERIENCE

ARiSE Lab, Columbia University	New York, NY
AI & Privacy Research Assistant	Oct 2025 - Present
• Developing an NSF-funded compliance audit framework for large language models using causal inference and Explainable AI at the Advanced Research in Software Engineering Lab.	
• Collaborating with faculty from Columbia, Wesleyan & University of South Carolina, and researchers from Google & IBM.	
CMATER Lab, Jadavpur University	
AI/ML Research Assistant	
• Published 9 research papers in peer-reviewed journals (IEEE, Springer, Elsevier) accumulating 350+ citations, and guided 4 students at the Centre for Microprocessor Applications Training and Research.	
• Researched stock market prediction, image segmentation and feature selection. Presented at 3+ conferences.	

ACADEMIC PROJECTS

Py_FS: An Open-Source Package For Feature Selection (Python)
• Coded open-source Python-based ML optimizations with 66+ stars and 39+ forks, leveraged by researchers worldwide.
CUFoodie: Food Near Columbia University (Python, JavaScript)
• Developed full-stack React + Flask web app with PostgreSQL backend to serve curated restaurants for 500+ students.

TECHNICAL SKILLS

Programming: C++, Java, Python, Bash.
Web Development & Technologies: React, Flask, JavaScript, TypeScript, HTML, CSS, PHP.
App Development: Kotlin (Android), Java.
Machine Learning: NumPy, SciPy, Pandas, PyTorch, scikit-learn, MATLAB.
Databases: MySQL, PostgreSQL.
Cloud & Tools: AWS (EC2, S3, DynamoDB, Bedrock, RDS, Q, EMR), Git, Hadoop.
Concepts: CI/CD, Linux, Low-Latency Systems, Automata, Generative AI, Deep Learning, REST APIs, OOP, Virtualization.
Certifications: AWS Data Analytics (2022), IBM Cloud Computing (2022).