

TRINAV BHATTACHARYYA

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EDUCATION

Columbia University

New York, NY

MS in Computer Science (Machine Learning Track)

Expected Dec 2026

Coursework: Supervised ML, NLP, AI, Algorithms, Security & Cryptography, Privacy.

Jadavpur University

Kolkata, India

BE in Computer Science and Engineering, 8.88/10

May 2022

Coursework: OS, Distributed Systems, TCP/IP, Discrete Math, Probability & Statistics.

PROFESSIONAL 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.
- Collaborated with 3 engineers to decrease replication time in Aurora's Graph DB by 20%, attracting clients such as Disney.
- Built and owned high-throughput validation infrastructure (Java, Bash, PostgreSQL) for distributed, latency-sensitive systems, cutting down production deployment time by 70%.
- Led a team of 3 to enhance C++ code and reduce chances of downtime by 15% via intelligent performance anomaly detection.
- Mentored an intern for six months and integrated code into production, increasing database node 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.
- Leveraged session-token mechanism in Linux Bash scripts during boot-up of DB nodes to extract metadata and achieve 100% adherence to mandated security protocols.
- Conducted interviews for SDE 1 and intern roles, collaborating with management and bar-raisers on evaluation and hiring.

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 & TEACHING EXPERIENCE

Columbia University Graduate School of Arts and Sciences

New York, NY

Teaching Assistant - II

Jan 2026 - Present

- Grading and supporting students for a Python-based graduate-level NLP course involving PyTorch and multivariable calculus.

ARISE Lab, Columbia University

New York, NY

AI & Privacy Research Assistant

Oct 2025 - Present

- Developing NSF-funded audit framework for 10+ LLMs using Causality at Advanced Research in Software Engineering Lab.
- Collaborating with 3 faculties from Columbia, Wesleyan & University of South Carolina, and 2 researchers from Google & IBM.

CMATER Lab, Jadavpur University

Kolkata, India

AI/ML Research Assistant

Jan 2020 - Apr 2022

- Published 9 research papers in peer-reviewed journals (IEEE, Springer, Elsevier) accumulating 400+ 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 ML algorithms using scikit-learn with 66+ GitHub stars and 39+ forks, leveraged by researchers worldwide.

CUFoodie: Food Near Columbia University (Python, JavaScript)

- Developed full-stack React + Flask app with PostgreSQL backend to serve curated restaurants for 500+ students near Columbia.

TECHNICAL SKILLS

Programming: C++, Java, Python.

Web & App Development: JavaScript, TypeScript, PHP, Kotlin (Android).

Machine Learning: NumPy, SciPy, Pandas, scikit-learn, MATLAB.

Cloud & Tools: AWS (EC2, S3, DynamoDB, RDS, EMR), Git, Hadoop.

Concepts: CI/CD, Low-Latency Systems, Generative AI, Deep Learning, REST APIs, OOP, Virtualization.

Certifications: AWS Data Analytics (2022), IBM Cloud Computing (2022).