# 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).