

Somoprovo Bhattacharjee

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EXPERIENCE

- OpenLM — Software Development Engineer 1

Jan 2025 - Present

 - Engineered a **Model Context Protocol (MCP) server** with **OAuth 2.0**-based authentication, exposing **15+** tools to multiple LLM clients and AI platforms for secure, real-time data querying.
 - Migrated the product's core ETL pipeline from a monolith to a microservices-based architecture with **Spark Streaming** and **Kafka**, enabling **125+** services to process **2M+** records daily; this eliminated major scaling bottlenecks, improved throughput by **35%**.
 - Implemented a cloud-agnostic seeding service that provisions customer resources across **AWS** and **Azure**, automating onboarding and provisioning data flow, cutting setup time by **70%**.
 - Executed a multi-tenant ETL service on **AWS** in collaboration with **ServiceNow**, that scales to **100+** tenants simultaneously, each managing **10K+** hosts.
 - Created an anonymization service for **GDPR** compliance that redacts **PII** data; deployed to all EU clients, strengthening data security and ensuring regulatory adherence for **50+** enterprise customers.
 - Enhanced platform reliability by collaborating with DevOps to deploy **Spark** services on an **Airflow-managed cluster**, reducing total memory consumption from **96GB** in standalone mode to **24GB** in cluster mode(**75% reduction in memory consumption**).
 - Launched a license-server log ingestion service to parse raw usage log files up to **10 GB** in size, normalize entitlement and activity data, and persist query-ready records that cut dashboard load time by **60%**.
- GreenAI — Software Developer(Internship)

Sep 2024 - Nov 2024

 - Architected a cross-platform chatbot using **React Native** to automate user interactions, enabling seamless query resolution and reducing manual support load by **40%** for the pilot client.
 - Prepared a production-ready **RAG** pipeline using **ChromaDB** with hybrid and embedding-based semantic search, incorporating ranked feedback for context-aware Q/A, achieving **92%** retrieval accuracy and reducing irrelevant results by **30%**.

PROJECTS

- Devstream — Co-founder and developer

Jan 2024 - Present

 - Discovered **Ruskin**, a distributed message queuing system optimized for small businesses, delivering lightweight deployment that reduced resource utilization by **40%**, while enabling hassle-free setup and efficient management of **10K+** concurrent consumers.
 - Architected fault-tolerant distributed system with **Paxos** consensus algorithm for leader election, implemented automatic failover mechanisms with **3-node** replication clusters, and designed consumer group-based concurrency control; achieved **99.9%** availability and eliminated single points of failure across **5+** production deployments.
- DDoS Attack Prediction — ML Researcher

Aug 2024 - Jun 2025

 - Developed transformer-based **DDoS** detection model with **multi-head attention** architecture, implementing **positional encoding** and **4-layer encoder** to analyze packet-level transport behavior in **SDN** edge environments; achieved **95%+** accuracy on network traffic anomaly detection with **10ms** inference latency.
 - Integrated real-time detection pipeline with **Ryu SDN** controller using **OpenFlow** protocol to auto-quarantine **200+** malicious IPs with **2%** false-positive rate; validated system performance across **100+** node Mininet simulations, processing **10K+** concurrent flows.
- Troopsight: 3D Location Tracking for NSG, MHA — Backend Developer

Nov 2024 - Dec 2024

 - Secured **Top 5** position among **1,500+** competing teams in **Smart India Hackathon 2024**, India's largest hackathon with **80,000+** national participant; designed real-time 3D soldier tracking system for **National Security Guard, Ministry of Home Affairs** implementing **Extended Kalman Filter** to achieve **90%+** positional accuracy within **2-meter** precision.
 - Architected fault-tolerant **Go** backend with **GSM/WLAN** hybrid connectivity, implementing automatic failover protocols that maintained **99.2%** system uptime during **15+** field simulations across low-connectivity zones, supporting real-time tracking of **50+** concurrent personnel.

TECHNICAL SKILLS

Languages: C++, Scala, Go (Gin, Echo), Python, C, Java
Frameworks & Libraries: Kafka, Spark, Apache Iceberg, Hadoop, FastAPIs, Django, REST APIs, React
Databases & Search: PostgreSQL, MySQL, MongoDB, DynamoDB, Redis, ChromaDB, Turbopuffer, Elasticsearch
Cloud Platforms: AWS (EC2, S3, Lambda, RDS, Glue, Athena, CDK, EKS), Azure (DevOps, Synapse, Blob, Data Lake)
DevOps & Monitoring: Docker, Kubernetes, Terraform, GitHub Actions, Linux, Datadog

EDUCATION

Jadavpur University — Bachelor of Engineering - Information Technology, GPA: 8.59/10 Jul 2021 - Jun 2025

POSITIONS OF RESPONSIBILITIES

- Chairman, JU ACM Student Chapter, Jadavpur University

Aug 2023 – May 2025

Led the chapter to become Eastern India's **second most active**, orchestrating **13+** technical events and university-wide workshops, driving **300+** student participation across Hackathons, competitive programming events and professional development sessions.
- Graphics Lead, Google Developer Students Club (GDSC), Jadavpur University

Jul 2023 – Jun 2024

Directed a **32-member** team and managed design/communications for **10+** events, engaging **2,000+** students on campus.