Somoprovo Bhattacharjee

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SUMMARY

- Backend and distributed systems software engineer who works a layer below the product, where compute gets wasted. Builds **C#**, **.NET** and **Spark** services on **Kubernetes** at OpenLM, moving **2M+** records daily across **100+** tenants. Contributor to **KAI-Scheduler**, the open-source **Kubernetes GPU** scheduler, and author of **TrainPulse**, a **Go** daemon for **LLM** training diagnostics.

EXPERIENCE

OpenLM — Software Development Engineer 1 **Jan 2025 - Present**

- Replaced an **Athena** and **Glue** query path with **DuckDB** over an **Apache Polaris** (**Iceberg**) catalog behind a new **C#/.NET GraphQL** API, taking UI queries from **30s** to **single-digit milliseconds** at steady-state load, with cold scans under **5s**.
- Decomposed a revenue-critical customer data platform from a monolith into independent microservices using **Kafka** and **Spark Streaming**, enabling scalable processing of **2M+** records daily with **35%** higher throughput.
- Shipped a **Model Context Protocol (MCP) server** with **OAuth 2.0** authentication, exposing **52+** tools to LLM agents for secure, real-time data querying.
- Delivered a multi-tenant ETL service on **AWS** in partnership with **ServiceNow**, scaling to **100+** concurrent tenants each managing **10K+** hosts.
- Migrated **Spark** services onto an **Airflow**-managed cluster, dropping memory consumption from **96GB** standalone to **24GB** in cluster mode, a **75%** reduction.
- Automated customer onboarding with a cloud-agnostic seeding service provisioning resources across **AWS** and **Azure**, cutting setup time by **70%**.

OPEN SOURCE

KAI-Scheduler — Contributor **2026 - Present**

- Merged **three** upstream fixes into **KAI-Scheduler**, the open-source **Kubernetes** scheduler for **GPU** and AI workloads.
- Eliminated a gang-scheduling eviction defect that terminated pods from gangs already completing, which had been killing distributed training jobs near the end of a run.

TrainPulse — Author **2026 - Present**

- Wrote a **Go** daemon for predictive diagnostics of AI and **LLM** training runs; collects **GPU** telemetry and host metrics, scores run health in real time, and infers a likely root cause rather than raising a bare alert.
- Encoded LLM-specific detection rules for failures that silently waste GPU hours: **model FLOPs utilization**, tokenizer stalls, **all-reduce** waits and per-rank stragglers.

PROJECTS

Devstream(Ruskin) — Co-founder and Systems Engineer **Jan 2024 - Present**

- Engineered **Ruskin**, a distributed message queuing system optimized for small businesses, delivering lightweight deployment that reduced resource utilization by **40%**, with single-command setup, handling **10K+** concurrent consumers.

Troopsight: 3D Location Tracking for NSG, MHA — Backend Developer **Nov 2024 - Dec 2024**

- Designed a real-time 3D soldier tracking system for the **National Security Guard, Ministry of Home Affairs**, implementing an **Extended Kalman Filter** to achieve **90%+** positional accuracy within **2-meter** precision.
- Architected a fault-tolerant **Go** backend with **GSM/WLAN** hybrid connectivity and automatic failover, sustaining **99.2%** uptime across **15+** field simulations in low-connectivity zones for **50+** concurrent personnel.

TECHNICAL SKILLS

Languages: C#, .NET, Go, Scala, Python, C++, Java, C
Systems & Backend: Distributed Systems, Microservices, REST APIs, GraphQL, Kafka, Spark Streaming, Model Context Protocol (MCP), OAuth 2.0
Databases & Search: PostgreSQL, MySQL, DuckDB, Apache Iceberg, MongoDB, DynamoDB, Redis, Elasticsearch, ChromaDB
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**

HONORS AND LEADERSHIP

Smart India Hackathon 2024 Grand Finalist **Nov 2024 - Dec 2024**
Top **5** among **1,500+** competing teams; built for the **National Security Guard, Ministry of Home Affairs**.

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 driving **300+** student participation.

Jagadish Bose National Science Scholar **May 2019 - Jun 2021**
Ranked **117** among **80,000+** applicants from West Bengal, India.