

Arkadev Banerjee

Software Engineer II — Distributed Systems & Backend

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Backend engineer with **4.5 years** building e-commerce infrastructure that processes **hundreds of thousands of orders every day** at CityMall — order pipelines, a **multimillion-SKU** distributed catalogue, and warehouse-capacity optimization across **15+ production microservices** in Node.js, Go and Python. Rotated through 5 teams (platform, catalogue, data science, operations), now also building **LLM-agent systems** with human-in-the-loop design.

EXPERIENCE

CityMall — Software Engineer II (SDE-II)

Oct 2023 – Present · Gurugram, India

Community-commerce platform; one of India's leading social e-commerce companies

- Own **warehouse & logistics capacity-planning systems** that gate admission for **every order placed, every day** across the fulfillment network — deciding what the delivery network can promise, and when. (Go, PostgreSQL, Redis)
- Designed an **atomic promotional-cap system with Redis + Lua**, eliminating race conditions in distributed checkout under peak festival-sale traffic. (Redis, Lua)
- Operate **15+ production microservices** spanning orders, catalogue, search, caching and notifications; drive root-cause analyses for cross-service production incidents.
- Built an **LLM-powered FinOps pipeline** that converts unstructured cloud invoices into clean, queryable cost analytics. (Python, LLMs)

CityMall — Software Engineer I (SDE-I)

Dec 2021 – Oct 2023 · Gurugram, India

- Led a **ground-up rewrite of the order service** — the pipeline every customer order flows through — and shipped it into live production as a drop-in replacement. (Node.js, Kafka, PostgreSQL)
- Built the **distributed product-catalogue store** behind search and discovery — **millions of active SKUs**, schema-flexible and write-heavy, absorbing constant catalogue change without downtime. (Node.js, PostgreSQL, MongoDB)
- Improved **ML recommendation systems** with the data-science team: storage efficiency and faster feature access for ranking pipelines. (Python, DynamoDB)
- Built **web-scraping systems for market price benchmarking**, feeding dynamic pricing and marketing strategy. (Python, Node.js)

JetBrains Academy (Stepik) — Project Author (freelance)

Jul 2021 – Dec 2021 · Remote

- Authored the **Graph Algorithm Visualizer** and **Hyper Collections** educational projects, with black-box test suites, used by learners worldwide. (Java)

Manastik — Software Engineer Intern

Sep 2021 – Nov 2021 · Remote

- Built the backend for a **teleneurology platform**: WebSocket servers, video streaming, and deployment of a neurorehabilitation ML service. (Node.js, Python, AWS)

SELECTED PROJECTS

Slack AI Agent · Personal AI chief-of-staff in Slack — approval-bus architecture, human-in-the-loop by design, \$0 idle cost TypeScript, LLM agents

3D Portfolio · Interactive "living distributed system" — WebGPU constellation with scroll-driven camera and CSS fallback ladder Three.js, TypeScript

Chain Registry · Blockchain-backed crime registration — **Top-20 in India (SRIIH)**; Manthan 2021 Grand Finale (MoE, Govt. of India) Node.js, Angular

SKILLS

Languages	TypeScript / Node.js, Go, Python, Java, Rust, C
Data & Streams	PostgreSQL, Redis, MongoDB, DynamoDB, Kafka
Infrastructure	AWS, Docker, microservice architecture, distributed systems, caching, capacity planning
AI Engineering	LLM agents, human-in-the-loop tooling, AI-assisted development workflows

EDUCATION

B.Tech, Computer Science & Engineering — Bengal Institute of Technology, Kolkata · **CGPA 9.4/10**

2019 – 2023