

Amitava Ghosh

SENIOR SOFTWARE ENGINEER · PLATFORM ENGINEER · SOFTWARE ARCHITECT

India

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Profile

Senior backend and platform engineer with 9+ years of experience designing, building, and owning high-scale systems in production. Specialized in platform architecture, fault-tolerant distributed systems, and developer infrastructure, with a strong track record of making architectural tradeoffs under ambiguity. Trusted to define system boundaries, stabilize complex production environments, and guide teams through critical technical decisions impacting reliability, performance, and velocity.

Skills

Languages

Go, JavaScript, Ruby, Node.js, Python, Lua, Bash

Databases

PostgreSQL, MySQL, Redis, DynamoDB

Technologies

AWS, Terraform, Docker & Containers, gRPC, Protobuf, Kafka, Redis Streams, SDK & DSL Design

Systems

Distributed Systems, Observability, Performance Profiling, Failure Analysis, Debugging Production Systems

Experience

Affogato (formerly Rendernet)

Bengaluru, India

SENIOR SOFTWARE ENGINEER — PLATFORM / ARCHITECTURE

12/2024 – Present

Architecture & System Design Ownership

- Designed an orthogonal architecture for a collaborative video editor, cleanly separating timelines, assets, workflows, and rendering concerns to enable independent evolution and rapid experimentation.
- Architected a workflow DSL backed by graph execution with concurrency controls, enabling faster integration of media-generation pipelines and reducing coordination overhead.
- Designed fractional indexing-based primitives for non-linear collaborative editing, avoiding global reindexing and write contention.
- Defined asynchronous, event-driven system patterns with queues and notifications to decouple user actions from long-running media processing and external dependencies.

Platform Engineering

- Owned platform-level architectural decisions across media generation, search, authorization, moderation, and gateway services, balancing latency, cost, and operational complexity.
- Designed a team-based authorization system and centralized reverse-proxy gateway with rate control and degraded-mode handling for external APIs.
- Built internal DSLs for cross-embedding, full-text search, and metadata enrichment to standardize retrieval and evaluation across products.
- Owned internal developer platform decisions, including CI/CD standards, QA gates, and automated PRD→ADR workflows using Claude-Code / Opencode agents.
- Standardized deployment, configuration, and review workflows across services, reducing cognitive load and improving developer velocity.

Image & Video Optimization

- Architected a dynamic image delivery pipeline (Golang + libvips) with on-the-fly and background compression, reducing transfer for 1K+ images from 4GB to 10MB.
- Drove upstream libvips and govips improvements by shifting to reader-based APIs, enabling streaming processing and automated C-bindings. [Upstream Issue](#)
- Designing a scalable ffmpeg farm for video compression, delivery, and editing workflows (WIP).

Agentic AI & LLM Infrastructure

- Designed agentic system topologies using CrewAI-style orchestration, structuring agents as composable, tool-driven workflows rather than ad-hoc prompt chains.
- Optimized LLM routing using embeddings and vector search to reduce latency and improve response quality.

- Built a critique and evaluation system combining LLM-based scoring, embeddings, readability, and emotional analysis for content quality assessment.

TheBackendCompany

Bengaluru, India

FREELANCE & CONSULTING

12/2023 – 12/2024

- Designed and built a web-based CSV processing system using SQLite WASM for fast, local analysis and transformation of large datasets.
- Consulted startups on early-stage architecture, infrastructure cost modeling, and cloud adoption strategies.
- Built github.com/go-batteries, a reusable platform toolkit for scaffolding backend services and internal infrastructure.
- Built LLM-backed APIs using Ollama and LangChain for text categorization and sentiment analysis experiments.
- Founded and operated a small D2C apparel brand, owning end-to-end execution across product design, vendor sourcing, tech, and operations.

Sequoia Group

Bengaluru, India

SENIOR SOFTWARE ENGINEER

08/2020 – 07/2023

- Owned backend architecture decisions for core services handling authentication, notifications, and data ingestion, balancing performance, security, and operational simplicity.
- Led migrations and stabilization efforts, resolving database locking issues and introducing observability via Datadog APM.
- Designed and maintained internal developer platform components (SDKs, migrations, tracing, PII filtering) adopted across teams.
- Diagnosed and resolved complex production failures using pprof, flamegraphs, Redis analysis, and system-level debugging tools.

Gojek

Bengaluru, India

PRODUCT ENGINEER

2016 – 2020

- Led architectural components of customer-service platform decomposition, including OAuth-based authentication, gateway migration, and service hardening.
- Designed and implemented Kong/Lua plugins for authentication and rate limiting, improving API security and reducing infrastructure costs.
- Diagnosed Kafka and networking failures during large-scale migrations using tcpdump, Wireshark, and system tuning.
- Contributed to platform-wide reliability and internationalization efforts through shared libraries and standards.

Leftshift

Pune, India

SOFTWARE ENGINEER

08/2016 – 09/2016

- Built internal tools for collecting and analyzing mobile app reviews, including API design and data modeling. Project later acquired by Gojek.

Kreeti Technologies

Kolkata, India

SOFTWARE ENGINEER

2014 – 2016

- Built and deployed full-stack applications using Rails, React, and Node.js, owning database design, authentication, and deployment.
- Implemented multitenant systems, background processing pipelines, and media handling workflows on AWS.

Education

West Bengal University of Technology

Kolkata, India

B.TECH IN ELECTRONICS & COMMUNICATION ENGINEERING

2010 – 2014