Amit Kumar

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SUMMARY

Software Engineer with 3+ years of experience building high-throughput, low-latency, fault-tolerant distributed systems and scalable applications microservices using Java, Spring Boot, Python, React.js and Apache Kafka. Strong in data structures and algorithms, system design, concurrency and event-driven architecture. Experienced with AWS, Kubernetes, Redis, CI/CD.

TECHNICAL SKILLS

Programming: Java8, Java 11+/17+, Python, C++, SQL
Backend: Spring Boot, REST APIs, Microservices, SQL Server, Apache Kafka, Distributed systems, Object-Oriented Design
Databases: Dynamo DB, MongoDB, Redis, Elasticsearch, AWS RDS, PostgreSQL
Cloud & Platforms: AWS (EC2, S3, EKS, API Gateway, SQS), Kubernetes, Docker, Terraform, Git, CI/CD, Linux, Splunk, Grafana
AI & LLMs: LLM Integration, Agentic Workflows, RAG, Prompt Engineering, Prompt Caching, Machine Learning, MCP

EXPERIENCE

Embitel - CARIAD India (A Volkswagen Group Company) Bengaluru, India
Software Engineer - II *Sep 2023 – Present*

- **Workflow Platform:** Owned design and delivery of an in-house enterprise workflow platform for support ticketing, SLA tracking, automated escalations and notifications, replacing a third-party tool and saving the company $15000/year; built on Spring Boot, a fault-tolerant Kafka pipeline (retries + DLQ) processing 10,000+ requests/day.
- **Event Streaming at Scale:** Replaced a nightly batch job with an event-driven microservice using idempotent Kafka consumers, streaming 25,000+ records/day with zero downtime and removing the 1-day data lag.
- **API Performance:** Reduced API P95 latency 60% (450ms to 180ms) with a Redis cache-aside layer (LFU eviction, TTLs) and optimization through indexing and query rewrites.
- **Data Consistency:** Solved the dual-write problem with the Transactional Outbox Pattern, ensuring 100% consistency between service databases and Kafka topics.
- **Video Processing:** Optimized a microservice API that downloads and converts 4-5GB test-drive recordings into video for analysis, by replacing full-file loading with async chunked streaming over HTTP byte-range requests and downloading batches in parallel on 6 worker threads; cut conversion time from 16 min to 1.5 min and memory usage by 60%.
- **Data Administration APIs:** Designed and developed 12+ RESTful APIs in Spring Boot, compliant with OpenAPI specifications, for the UDE platform that manages all vehicle sensor related data.
- **ADAS Dashboard:** Built a real-time ADAS signal visualization web dashboard (React, Python) letting test engineers monitor and filter high-volume sensor data live, reducing manual analysis effort by ~70%.
- **LLM & AI Tooling:** Shipped an AI-powered PR review agent that flags defects and security issues, cutting manual review time ~40%; reduced LLM input-token usage ~60% via prompt caching, incremental summarization and RAG top-K retrieval with relevance filtering.
- **Cloud & CI/CD:** Automated deployments by provisioning AWS infrastructure (EC2, S3, EKS) with Terraform and building Jenkins CI/CD pipelines, eliminating manual releases.
- **Mentorship:** Mentored a team of 4 engineers on Spring Boot development, clean code practices, ML modelling, Python, multithreading and locking concepts, and Agile/Scrum workflows.

EDUCATION

UIET, Kurukshetra University (NAAC A++ Accredited) Aug 2019 – Aug 2023
Bachelor of Technology in Electronics and Communication Engineering CGPA: 8.6

PROJECTS

OpsCopilot **– AI Copilot for Production Troubleshooting** *Sep 2026*
Java, Spring Boot, React.js, Kafka, PostgreSQL, Google Gemini

- Built an LLM-powered SRE copilot that turns plain-English production questions into structured, read-only diagnostic actions, with guardrails (read-only tool access, mandatory execution checks) to keep AI-driven actions safe.

Zuno **– Multi-Tenant Project Management SaaS** *Mar 2026*
React.js, Java, Springboot, Kafka, Redis, PostgreSQL, WebSockets

- Built workspaces, ticket assignment, real-time notifications and collaboration; used Kafka to decouple ticketing, notifications and email into independent services, plus an LLM workflow that converts plain-English requirements into tickets.

ACHIEVEMENTS

- **3-time Spot Award** + **Xtra Mile Award** at **Volkswagen** for impactful contribution and engineering excellence.
- **Smart India Hackathon 2022:** 1st place among 29,600+ teams (road-health monitoring platform).
- **UNESCO India–Africa Hackathon:** Winner among 100+ international teams (healthcare innovation).