Sparsh Raj

Backend & Platform Engineer

Backend and platform engineer building Java / Spring Boot microservices, Kafka event streams, and Kubernetes infrastructure on AWS, all as code. CKAD-certified CNCF contributor: started KubeModel, OpenCost's next-generation data model, in Go during the LFX Fall 2025 mentorship (14 merged PRs). Built a 6-service Spring Boot 4 platform on AWS EKS with a Kafka Saga, Terraform, and OIDC-based CI/CD. MS in Computer Science (4.0 GPA).

sparsh.raj30@gmail.com | spa-raj | spa-raj
Bengaluru (preferred) — open to Hyderabad, Pune, or Remote

Skills

- **Languages:** Java (8 / 11 / 17 / 21), Go, Python, SQL, Bash, TypeScript
- **Backend:** Spring Boot 4, Spring Security, JPA / Hibernate, REST APIs, Microservices, Saga Pattern, Event-Driven Architecture, OAuth2 / JWT
- **Platform & DevOps:** Kubernetes (CKAD), Docker, Helm, Terraform, Kong API Gateway, GitHub Actions CI/CD (OIDC), Prometheus
- **Cloud:** AWS (EKS, RDS, ECR, SES, OpenSearch, Secrets Manager + KMS, IAM OIDC), GCP (Cloud Run, Vertex AI), Azure (Policy, DevOps)
- **Data & Messaging:** MySQL, PostgreSQL, MongoDB, Redis, OpenSearch / Elasticsearch, Apache Kafka (KRaft), Confluent Cloud
- **Testing & AI:** JUnit 5, Mockito, k6 load testing; RAG pipelines (vector search + reranking), Gemini / OpenAI APIs, Claude Code

Experience

Open Source Contributor – OpenCost (CNCF Sandbox) *Sep 2025 – Nov 2025*
Linux Foundation Mentorship Program (LFX, Fall 2025) | `github.com/opencost/opencost` | **14 merged PRs**

- Started **KubeModel** (OpenCost's Data Model 2.0) in Go: a flat, UID-keyed package for core Kubernetes resources with versioned binary codecs for storage (PR #3472, #3443).
- Chose bingen over Protobuf for serialization: Protobuf caps messages at 2 GiB and is optimized for the wire, not for storage.
- Added UID tracking across **61+ metric types and 30+ Prometheus queries** for 10 Kubernetes resource kinds, so resources recreated with reused names no longer get misattributed cost (PR #3366, #3384).
- Shipped production bug fixes (AND-filter order #3394, negative idle cost in promless mode #3393, GCP N4 pricing #3289) and a 31-metric integration test suite for UID consistency across time windows.
- Wrote the "Introducing KubeModel" blog post and presented the project poster at the LFX Mentorship Showcase, **Open Source Summit India 2026** (Mumbai).

Cloud Engineer / Security Delivery Analyst *Mar 2022 – Dec 2024*
Accenture, Kolkata

- Automated PCI-DSS, NIST, and CIS compliance remediation for thousands of non-compliant Azure resources with PowerShell, raising client compliance to 90%+.
- Built Azure DevOps CI/CD pipelines for policy deployment and Power BI dashboards for compliance monitoring.
- Led a 5-member team and trained 7 engineers; received the Accenture ACE Extra Mile Award (FY24 Q3).

Projects

VibeVault – Spring Boot Microservices on AWS EKS *Feb 2026 – Mar 2026*
`github.com/spa-raj/vibevault` | MS capstone | 6 services | 55 E2E tests | 114 PRs across 8 repos

- Built 6 Spring Boot 4 / Java 21 services (User, Product, Cart, Order, Payment, Notification), each with its own MySQL / MongoDB database, Helm chart, and CI/CD pipeline; OAuth2 authorization server with Spring Security.
- Choreography-based **Saga over Kafka (KRaft)** with idempotent consumers (unique constraints on event IDs); Razorpay payments with HMAC-verified webhooks; email via AWS SES.
- Moved 2M-product search from MySQL LIKE (100% failure at 15 concurrent users) to OpenSearch: **99.3% success at 27 ms p50** under k6 load.
- 6 Terraform modules (VPC, EKS, RDS, ECR, Secrets Manager + KMS, OpenSearch); Kong gateway behind NLB + ACM; GitHub Actions with OIDC, so there are no static AWS keys.

CartIQ – AI Shopping Assistant *Dec 2025*
`github.com/spa-raj/cartIQ-backend` | *AI Partner Catalyst Hackathon – Confluent Challenge*

- Spring Boot modular monolith (8 modules) streaming user events through Confluent Cloud Kafka + Flink for real-time personalization; Gemini RAG chat with Vertex AI vector search and ranking; Next.js frontend; deployed on Google Cloud Run.

PDF Whisperer – RAG Q&A over PDFs *Nov 2026*
Live on Hugging Face | `github.com/spa-raj/pdf-whisperer`

- Answers questions only from the uploaded document, with page citations: Chroma vector search (top 25) + cross-encoder reranking (top 4) before the LLM; per-session isolation for concurrent users.

Certifications & Education

CKAD: Certified Kubernetes Application Developer – The Linux Foundation *Nov 2026*

Scaler Neovarsity – Woolf University *April 2026*
MS in Computer Science | *CGPA: 4.0* | *Coursework:* DSA, System Design (HLD/LLD), Databases, Java, Spring Boot

VIT, Vellore *July 2021*
B.Tech in Electrical and Electronics Engineering | *CGPA: 8.66*