ABHINAV RAVELLA

ravellaabhinav31@gmail.com| Open to Relocate | LinkedIn | GitHub | Portfolio | +1 (716) 507-3324

SUMMARY

Software Engineer with 3+ years of experience designing, building, and running full-stack systems using Java 17, Spring Boot, Kafka, and AWS. Builds high-volume, low-latency microservices for regulated banking and healthcare platforms, supporting payment processing and compliance workflows. Owns backend APIs, event-driven architecture, cloud infrastructure, CI/CD pipelines, and observability, driving measurable improvements in performance, reliability, cost efficiency, scalability, and production readiness.

PROFESSIONAL EXPERIENCE

Citi Bank — Jul 2025 – Present

Software Engineer — New York, USA

- Developed Java 17 Spring Boot REST microservices for payment execution, account-state processing, and transaction orchestration, processing 500K+ daily events while maintaining p95 latency <180ms across downstream and regulatory reporting systems.
- Re-architected monolithic Java applications into cloud-native microservices with REST APIs, enabling independent deployments, reducing release coupling by 60%, cutting change lead time from 5 days to 2 days, and lowering recurring incidents by 25%.
- Engineered Apache Kafka event-driven pipelines with idempotent consumers and fault-tolerant retries, preventing duplicate postings and reducing reconciliation breaks by 35% across settlement and ledger workflows.
- Optimized AWS infrastructure (EC2, RDS, Auto Scaling Groups) using workload-based auto scaling and capacity planning, lowering monthly infrastructure spend by 22% without breaching latency SLOs during peak transaction windows.
- Implemented IAM, RBAC, OAuth2, and JWT-based security in Spring Boot APIs, securing financial endpoints, reducing access control drift, and passing quarterly audits with zero critical findings.
- Built production observability using Prometheus, Grafana, tracing, and centralized logging, reducing incident detection time from 45 minutes to 5 minutes and lowering MTTR by 32%.
- Automated CI/CD pipelines with GitHub Actions, Jenkins, Docker, and Kubernetes, increasing deployment frequency from weekly to 3× per week and reducing rollback rates by 40%.

Philips — Jan 2022 – Aug 2024

Software Engineer 1 — Bangalore, India

- Built Java Spring Boot microservices for patient administration, device coordination, and clinical workflow systems, processing 20K+ daily transactions across 50+ hospitals while sustaining 99.9% availability under concurrent clinical and administrative workloads.
- Modernized legacy Java applications into service-oriented microservices, introducing event-driven architectures that reduced patient onboarding and emergency registration time to under 90 seconds, increasing throughput by 28% during peak intake scenarios.
- Designed Apache Kafka asynchronous pipelines for patient events, device telemetry, and alert processing, doubling end-to-end throughput and eliminating cascading failures during burst admission scenarios and high-frequency medical device signal ingestion.
- Streamlined PostgreSQL and MSSQL databases through index tuning, partitioning strategies, execution-plan analysis, and query optimization, reducing critical query latency by 40% and improving performance of reporting and analytics workloads.
- Provisioned AWS cloud infrastructure (EC2, RDS, S3, Lambda) using high-availability and fault-tolerant design patterns, cutting node-failure recovery time from 20 minutes to 6 minutes and improving service continuity during infrastructure disruptions.
- Standardized Docker and Kubernetes deployments across development, staging, and production environments, reducing environment setup time from 2 days to 3 hours and improving release consistency across clinical systems.
- Secured applications using OAuth2, OpenID Connect, and JWT-based authentication and authorization, reducing security incidents by 30% and eliminating 15+ hours/month of manual compliance effort for internal and external audits.
- Integrated CI-driven testing pipelines using JUnit and Mockito, reducing defects by 25% and achieving 98% release-pass-rate.

KEY PROJECTS

Dataflow - Distributed Workflow Orchestration Platform - *Java, Spring Boot, Apache Kafka, PostgreSQL, AWS.* **Jan 2025 – May 2025**

- Designed Java Spring Boot microservices to orchestrate workflow execution and dependency tracking using Kafka-backed event coordination, improving reliability and preventing failure propagation across concurrent pipeline stages.
- Deployed containerized services on AWS (EC2, RDS) with Docker and Kubernetes, integrating metrics and logs for execution visibility and validating fault recovery through controlled node and pod failure scenarios.

Corporate Action Processing Platform - *Java, Spring Boot, REST APIs, PostgreSQL, AWS* **Jul 2024 – Dec 2024**

- Engineered Java Spring Boot REST microservices to ingest and process 1,000+ daily corporate actions, enforcing transactional workflows and audit trails to ensure accurate multi-stage settlement across regulated financial operations.
- Optimized PostgreSQL schemas and batch pipelines using indexing and query tuning, reducing reconciliation delays and improving end-of-day settlement reliability during peak financial processing periods.

SKILLS

Programming & Scripting Languages: Python, Java, JavaScript, TypeScript, SQL, C++
Frontend & UI Development: React, React Native, Next.js, Vue.js, Redux Toolkit, Tailwind CSS, Material UI, Mantine, Shadcn/UI
Backend & Service Frameworks: Node.js, Express.js, Spring Boot, Flask, GraphQL
Databases & Storage Solutions: PostgreSQL, MySQL, MongoDB, Redis, Cassandra, DynamoDB, Firebase, OracleDB
Artificial Intelligence & LLMs: LangChain, RAG pipelines, OpenAI API, Vector Databases, Weaviate, Embedding-based Search
Cloud Infrastructure & DevOps Tools: AWS (EC2, S3, Lambda), RDS, Docker, Kubernetes, CloudWatch, GitHub Actions, GitLab
Testing & QA Tools: Jest, Mocha, Cypress, JUnit, Postman, PyTest, Jenkins, Kibana, Prompt Engineering
Methodologies & Practices: Agile/Scrum workflows, Microservices Architecture, Event-driven Systems, CI/CD Automation, DevOps

EDUCATION

Master of Science in Computer Science | *University at Buffalo - State University of New York* — ***Buffalo, NY***

Bachelor of Technology in Computer Science | *Amrita Vishwa Vidyapeetham* — ***Coimbatore, India***

RESEARCH & PUBLICATIONS

Cloud-Based Intrusion Detection for Advanced Threats Using Machine Learning, ***IEEE Xplore, 2024 -*** Link