

# Kshitij Kumar

+1-716-903-5420 | [kshitijkumar3@gmail.com](mailto:kshitijkumar3@gmail.com) | [LinkedIn](#) | [GitHub](#) | [Portfolio](#) | San Francisco, CA

## PROFESSIONAL SUMMARY

Full Stack Software Engineer with 3 years of experience building scalable, cloud-native **distributed systems**. Specialized in **Java, Python, TypeScript, and AWS architectures**, with deep expertise in **database internals**. Focused on rigorous code quality and **low-latency system** design, with hands-on experience building **Agentic AI** systems.

## TECHNICAL SKILLS

**Languages:** Python, Java, TypeScript, JavaScript, C++, SQL

**Backend/Distributed Systems:** Spring Boot, FastAPI, Node.js, Apache Kafka, RabbitMQ, Microservices

**AI/LLM Engineering:** LangGraph, LlamaIndex, Agentic Workflows, PgVector, RAG Pipelines, OpenRouter

**Frontend:** React, Next.js, Angular, HTML, CSS

**Databases:** PostgreSQL, MongoDB, Redis, Oracle, MySQL, Snowflake, Elasticsearch

**Observability:** Telemetry Pipelines, OpenTelemetry, Prometheus, Grafana, Distributed Tracing

**Cloud/DevOps:** AWS, EC2, SNS, SQS, ECR, ECS, Lambda, DynamoDB, IAM, Docker, Kubernetes, Tomcat, NginX, Maven

## PROFESSIONAL EXPERIENCE

### Software Engineer

Aug 2021 – Aug 2024

Bangalore, India

Wipro Ltd.

- Engineered a migration pipeline in **Java, Spring Boot**, leveraging Debezium for CDC and **Apache Kafka** to stream updates from sources (Oracle Redo Logs, MySQL Binlogs, PostgreSQL WALs) to diverse targets (PostgreSQL, MSSQL, Snowflake, BigQuery, Redshift).
- Implemented **Dead Letter Queues** to isolate and replay less than 0.5% of failed events and drifted data, preventing pipeline blockage during complex schema conversions.
- Architected a real-time validation software utilizing **LSN**-based watermarking to monitor **Eventual Consistency** and **Replication Lag**, ensuring **99.999%** data integrity across cross-vendor ecosystems.
- Spearheaded the transition to Microservices, implementing an **API Gateway** with granular **Token Bucket** rate limiting policies to prevent Noisy Neighbor issues and DDoS attacks.
- Optimized the **Data Validation** module by combining queries via **Apache Drill** with **CDC stream analysis**, verifying records across 10+ database dialects and reducing validation time by ~31%.
- Partnered with a Principal Architect to develop a predictive **DB Selection Framework** from scratch using **Python** and **FastAPI**; the tool analyzed I/O patterns and storage growth to identify optimal migration targets, projecting cloud infrastructure **savings of ~25%**.
- Secured stakeholder interest by demonstrating this framework to 10+ potential clients including **ANZ Bank, Mazda, Bank of America, Charles Schwab** and **Ford**.
- Wrote clean, maintainable, and testable code following **CI/CD** best practices using **GitHub Actions** and **Git** while mentoring and conducting code reviews for a team of 2 junior developers.

## PROJECTS

### K-Docs: A Google Docs Replica | *TypeScript, Docker, React, PostgreSQL, AWS, WebSocket*

[Link](#)

- Implemented a real-time collaborative editor replicating Google Docs. Used Yjs (**CRDTs**) and WebSockets to enable conflict-free concurrent editing, ensuring eventual consistency and sub-100ms latency for multiple users without central locking.
- Designed a secure document storage layer using PostgreSQL and Node.js, implementing granular Role-Based Access Control (RBAC) within a containerized Docker environment hosted on AWS.

### AI Code Reviewer | *TypeScript, Python, FastAPI, Apache Kafka, Next.js, Gemini API LLM, MySQL*

[Link](#)

- Engineered an event-driven AI agent that consumes GitHub Webhooks via Apache Kafka to scale to 500+ concurrent PRs, utilizing Google Gemini to provide automated Quality Scores (0-100), Security audits, and Code Smell detection directly on Pull Requests. This reduces manual review cycles by 60%.

### Vibe Matcher | *Java, Spring Boot, Spring Security, MySQL, PostgreSQL, RabbitMQ*

- Developed a fault-tolerant microservices ecosystem using Spring Cloud and RabbitMQ for asynchronous messaging, integrating Hystrix Circuit Breakers and Spring Security to ensure high availability and secure data access across distributed services.

## EDUCATION

### State University of New York at Buffalo

New York, USA

Master of Science in Computer Science and Engineering

Aug 2024 – June 2026

### Birla Institute of Technology, Mesra

Ranchi, India

Integrated Master of Science in Mathematics and Computing

July 2016 – June 2021