

Benudhar Behera

Lead Software Engineer | Java, Distributed Systems, Cloud & AI Platforms

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PROFESSIONAL SUMMARY

Lead Backend Engineer with 8.9+ years of experience designing and building scalable, resilient distributed systems and cloud-native microservices. Strong expertise in **Java, Spring Boot, Kafka, Python, FastAPI, and AWS**, with hands-on experience in GenAI application development using **RAG, LLMs, Vector Databases, and Model Context Protocol (MCP)**. Experienced in architecting event-driven systems, high-performance APIs, and AI-enabled backend platforms with a strong focus on scalability, reliability, and clean architecture.

TECHNICAL SKILLS

Programming Languages: Java (Primary), Python

Backend & Frameworks: Spring Boot, Spring WebFlux, Spring Data, FastAPI, REST APIs, Microservices

AI & GenAI: RAG, LLMs, OpenAI API, Spring AI, Model Context Protocol (MCP), AI Agents, Vector Databases, LangChain

Distributed Systems & Messaging: Kafka, Event-Driven Architecture, SQS, SNS

Database & Storage: PostgreSQL, MongoDB, DynamoDB, Redis, Elasticsearch

Cloud & DevOps: AWS, Terraform, Docker, Kubernetes, Jenkins, CI/CD

Architecture: Distributed Systems, Microservices Architecture, Cloud-Native Architecture, System Design, Resilience

Design Principles: System Design, HLD, LLD, Scalability, Design Patterns, SOLID, Rate Limiting

Process & Delivery: Agile, Scrum, Sprint Planning, Stakeholder Management, Cross-functional Collaboration

KEY ACHIEVEMENTS

- **Architected and delivered** a production-grade **GenAI platform** using **LLMs, RAG, vector search, and MCP**, supporting **70+ requests/minute** with low-latency, secure, and highly available document retrieval and AI-powered tool integration.
- **Designed and led** cloud-native, event-driven microservices **using Java 21, Spring Boot, Kafka, and AWS**, building scalable and fault-tolerant backend systems for enterprise applications.
- **Reduced API latency by ~40%** through caching, query optimization, JVM tuning, and asynchronous processing, improving overall system throughput and responsiveness.

PROFESSIONAL EXPERIENCE

Lead Backend Engineer (Senior Technology Consultant) | Ernst & Young (EY)

Bangalore, India • Mar 2024 - Present

- **Led end-to-end architecture** and delivery of an **enterprise-grade GenAI conversational platform**, integrating LLMs with large-scale research datasets to enable real-time intelligent insights.
- Designed and developed cloud-native microservices using **Java 21, Spring Boot and Kafka** following Hexagonal Architecture, enabling scalable and maintainable enterprise applications.
- **Built RAG-based knowledge retrieval** systems using vector embeddings and semantic search, improving contextual response accuracy and retrieval efficiency across large-scale datasets.
- **Designed MCP-based AI tool integrations** to enable LLMs to dynamically discover and invoke backend capabilities, connecting conversational AI workflows with enterprise services and data.
- **Collaborated** with product managers, AI engineers, and data teams to deliver secure, production-ready AI solutions using Agile delivery practices.

Senior Backend Engineer (Senior Project Engineer) | Wipro Limited

Bangalore, India • Jul 2021 – Feb 2024

- Designed and developed **cloud-native microservices** using **Java, Spring Boot and Kafka** for a large-scale enterprise platform, enabling scalable backend services and real-time event processing.
- Improved API response time by over **30% through query optimization**, caching strategies, asynchronous processing and JVM tuning.
- Optimized database **indexing strategies and SQL execution** plans to improve throughput for high-volume transactional workloads.
- Built comprehensive unit and integration test suites using **JUnit 5 and Mockito**, improving application stability and reducing production defects.
- Troubleshoot production incidents using **Splunk, Grafana and AWS CloudWatch**, reducing mean time to resolution through proactive monitoring and log analysis.

Backend Engineer (Associate IT Consultant) | ITC InfoTech

Bangalore, India • Sep 2020 – Jul 2021

- Developed **scalable cloud-native backend services** using **Java, Spring Boot and RESTful APIs** for an enterprise e-commerce platform, supporting order lifecycle management, payment processing and real-time transaction workflows
- Implemented **event-driven architecture using Kafka** to support asynchronous order processing, payment notifications and inventory synchronization across distributed services.
- Designed **idempotent APIs and resilient payment workflows** using retry and failure recovery mechanisms, ensuring reliable transaction processing.
- Improved API performance through **database optimization, indexing strategies and efficient query design**, reducing response latency for business-critical operations.
- Developed reusable business components following **SOLID principles**, clean architecture and design patterns, improving code quality and maintainability.
- Implemented comprehensive automated testing using JUnit 5 and Mockito, increasing **test coverage and ensuring production stability**.
- Participated in technical **design discussions, code reviews and production deployments**, contributing to the successful delivery of scalable enterprise applications.

Software Engineer | Silicon Tech Lab Pvt Ltd.

Bhubaneswar, India • Nov 2017 – Sep 2020

- Developed backend modules using **Java, Spring MVC, Hibernate ORM and PostgreSQL** for enterprise ERP applications supporting business process automation.
- Implemented **business logic and reusable service components** to support core ERP functionalities, improving application maintainability and reducing development effort.
- Resolved production issues through root cause analysis, bug fixing and performance tuning, improving application stability and customer satisfaction.
- Collaborated with senior engineers**, QA teams and business analysts to deliver production-ready features following Agile development practices.

CERTIFICATIONS

- EY IT Architecture - Solution Architecture (Bronze), 2025
- EY Artificial Intelligence - Applied AI (Bronze), 2024
- Introduction to Generative AI - Google Cloud

EDUCATIONAL QUALIFICATION

Bachelor of Technology (B. Tech) — Computer Science & Engineering

Silicon Institute of Technology, Bhubaneswar | 2013 – 2017