

Nikhil Sai Nambula

Software Engineer, Distributed Systems, Java, Spring Boot, Scale, Reliability, System Design

nambula.nikhilsai@gmail.com, +91 63050 57714, Hyderabad, India

linkedin.com/in/nikhil-sai-nambula, github.com/Nikhil-sai-nambula, leetcode.com/u/Nikhilsai007

Summary

Backend Software Engineer with 3 years of production experience owning distributed Java/Spring Boot microservices end to end, on a platform serving 2M+ users and 50K+ daily requests. Delivered measurable impact: reduced API latency by 30 percent through query optimization, cut database load by 40 percent through a custom distributed caching layer, and built fault-tolerant, self-healing services (circuit breakers, retry/backoff, dead-letter queues) that recover automatically from failures. Strong foundation in distributed systems, high availability, scalability, and low-level design (SOLID principles, design patterns). Full-stack capable, with a shipped React frontend integrated with backend services. Hands-on with Java, Python, and C++, with 1000+ LeetCode problems solved. AWS Certified Developer (2026).

Technical Skills

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

Distributed Systems and Architecture: Microservices, distributed systems, scalability, high availability, fault tolerance, caching, message queues, circuit breakers, self-healing/dead-letter-queue pipelines, event-driven architecture, CAP theorem

Low Level Design: SOLID principles, design patterns (Strategy, Factory, Observer, Singleton), object oriented analysis and design

Backend / Frameworks: Spring Boot, Spring Security, REST APIs, gRPC, Kafka, Hibernate, JPA

Databases: PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch

Cloud (AWS): EC2, S3, Lambda, DynamoDB, API Gateway, SQS, EKS, CloudWatch, X-Ray

Frontend: React (full-stack project experience)

Build, Test, Deployment: Git, CI/CD (GitHub Actions), Docker, Kubernetes, Terraform, Linux, Maven

Testing: JUnit 5, Mockito, Integration Testing, Load Testing (JMeter)

Professional Experience

Tata Consultancy Services (TCS), Hyderabad, India

June 2023 - Present

Software Developer - Backend

- Owned 3 Spring Boot microservices end to end, from design through implementation, testing, deployment, and monitoring on AWS, serving 2M+ users and 50K+ daily requests with full observability via CloudWatch.
- Diagnosed and eliminated N+1 query patterns by redesigning JPA/Hibernate fetch strategies, cutting database round-trips from approximately 40 to 8 per request and reducing API latency by 30 percent.
- Designed a distributed Redis caching layer with custom TTL policies, cutting primary database load by 40 percent and improving P99 throughput under burst traffic.
- Built fault-tolerant, self-healing services using circuit breakers, retry/backoff, and dead-letter queues (SQS) behind AWS API Gateway, enabling automatic recovery from downstream failures without manual intervention.
- Designed a Kafka-based event-driven architecture to remove synchronous coupling between 3 downstream services, and implemented JWT/RBAC authentication securing REST APIs while writing JUnit/Mockito test suites and participating in code reviews.

Technical Projects

ShopVerse - Distributed E-Commerce Platform, Java, Spring Boot, MongoDB, Redis, JWT, React

GitHub: github.com/Nikhil-sai-nambula, Live: shop-verse-six.vercel.app

- Designed and built a full-stack, distributed e-commerce platform from scratch using Java and Spring Boot with MongoDB, applying SOLID principles and secure order state-machine design end to end.
- Built a responsive React front end with JWT authentication and Redis session caching, and automated CI/CD using GitHub Actions.

AI-Powered Recipe Generation from Food Images, Python, TensorFlow, Keras

- Built a computer vision pipeline using InceptionV3 and Xception CNNs with an LSTM decoder for ingredient generation, achieving 87 percent top-5 accuracy on a custom-labelled Food-101 dataset subset.

Certifications and Achievements

- AWS Certified Developer - Associate (2026). Validated expertise in EC2, Lambda, DynamoDB, API Gateway, SQS, and IAM.
- 1000+ LeetCode problems solved, covering Dynamic Programming, Graph Algorithms, Trees, and Sliding Window techniques.

Education

SRKR Engineering College, Bhimavaram

2019 - 2023

B.Tech in Computer Science and Engineering, GPA: 8.0 / 10.0

Coursework: Data Structures and Algorithms, Operating Systems, DBMS, Computer Networks, Object Oriented Programming, Distributed Computing, Cloud Computing, Design and Analysis of Algorithms