

Rohith Kumar Karnati

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Email: rohithkumar0902@gmail.com | Mobile: 9398796475

SOFTWARE DEVELOPMENT ENGINEERING

Senior Backend Engineer with 5+ years of experience building and scaling high-performance distributed systems. Designed **microservices handling 1,500+ RPS** and supporting 500+ downstream clients globally, with **sub-150ms** latency requirements. Deep expertise in Java, Spring Boot, databases, distributed systems, OAuth2, mTLS, observability, and cloud-native engineering. Proven ability to own production systems end-to-end, improve performance and reliability, and deliver zero-rollback releases at scale.

EXPERIENCE

Senior Software Engineer

FTC at Morgan Stanley (via Wissen Technology)

Jan 2024 – Present

Bengaluru, India

- Working on **Datalink**, a mission-critical microservices-based data abstraction layer for the Strategic Reference Data (SRD) department, serving **500+ downstream users** across Tokyo, London, and New York with a **<150ms SLA**.
- Designed and implemented a multi-layered microservices architecture comprising **Mainsvc, Datasvc, Bulksvc, AuthService, Gatewaysvc** with JWT-based authentication and OAuth2/OIDC protection. MainService manages authentication and authorization a **user entitlements**, while DataService manages database connections with dynamic scaling based on market demand.
- Identified performance bottlenecks during load testing caused by blocking RestTemplate for huge response and engineered **BulkService** with streaming responses capable of processing **10,000+ identifiers per request**, achieving **300%+ throughput improvement**.
- Implemented **AuthService** to extend OAuth2 authentication from system-to-system client credentials flow to support human users through the **Authorization Code Flow**, enabling human users to query calendar and trading hours data securely for a scale of around 20k+ users.
- Built REST APIs supporting **exact-match, cross-reference, and criteria-based queries**, routing requests to respoective data sources including **SingleStore, MSSQL, MongoDB, and Sybase**.
- Containerized the application stack using **Docker on Linux** and deployed services across **three global regions** with GTM and load balancing. Implemented dynamic scaling using the **Treadmill framework** based on real-time regional demand.
- Managed **200+ production Linux boxes** with 160GB RAM and 16 vCPU each, handling infrastructure configuration, resource allocation, monitoring, capacity planning, and performance optimization to support **1,500+ RPS**.
- Owned end-to-end **CI/CD and DevOps** responsibilities including Docker image creation, internal registry management, Jenkins deployment automation, infrastructure provisioning, testing, and production rollouts across environments.
- Developed **decisionService** for automated functional and performance testing and implemented **OpenTelemetry and Loki** observability with Autosys health monitoring to proactively detect unhealthy instances and performance degradation; enabled rapid alerting and removal from rotation, eliminating potential outages before customer impact.
- Engineered a secure cloud reach-back solution using a **Gateway Service** with **mTLS** and cloud identity-provider OAuth2 integration to overcome firewall restrictions while maintaining portability and security with a dedicated gateway service.
- Performed **Deco of cloud routing application** identified that maintaining Azure Spring App solely as a routing proxy (client cloud → our cloud → on-premises) was operationally complex and costly proposed and successfully implemented architectural **redesign** by migrating reach-back connectivity logic directly to client-side application, eliminating redundant cloud infrastructure while maintaining seamless on-premises data access.
- Executed **20+ production deployments with zero rollbacks** through structured testing gates, approval workflows, and Jenkins-based automation while supporting **50M+ daily data distributions** with zero data-loss incidents.
- Established an **F2B (Front to Back) QA environment** to isolate testing from production and eliminate the impact of QA deployments on active users.
- Led Linux infrastructure provisioning, Autosys job automation, log aggregation, alerting, and production on-call support, performing root-cause analysis and implementing systemic improvements for reliability and planning capacity
- Maintained legacy application portfolio (DL3, DL3i) supporting existing clients; managed user issues, coordinated bug fixes, and planned controlled deployments to ensure backward compatibility

- Leveraged modern AI engineering tools including **Claude, GPT, Codex, and AMP** for code generation, architectural design, documentation, troubleshooting, and performance optimization.

Programmer Analyst

Cognizant Technology Solutions

July 2021 – Aug 2023

Hyderabad, India

- Worked with **ING Bank**, a Dutch multinational banking organization providing financial services to clients.
- Assisted in developing and maintaining a dedicated “Documentation” tab within an application, enabling users to progress through Credit and Approval workflows before reaching the documentation phase for loan applications.
- Developed RESTful endpoints for basic **CRUD operations** for employee and customer records using Spring MVC and stored procedures.
- Applied **SOLID principles** to ensure robustness, scalability, and maintainability in software design and development.
- Utilized **Low-Level Design** and Java design patterns including Singleton, Factory, and Builder to address recurring design problems and improve code readability.
- Participated in daily **Agile and Scrum** ceremonies and worked as a Scrum Master for story refinement and planning.

Internship at Cognizant

Mar 2021 – May 2021

- Completed a 2-month software testing training program, acquiring knowledge of testing methodologies, processes, and tools.

EDUCATION

Scaler Academy

Java, Data Structures and Web Technologies

Dec 2022 – Present

Sathyabama Institute of Science and Technology

Bachelor of Engineering in Electronics and Communication Engineering

CGPA: 8.25

Aug 2017 – May 2021

PROJECTS

Book My Show Clone

Java, Low Level Design, Spring Boot, Spring Framework, Git

[Source Code](#)

- Designed and implemented a scalable backend architecture using **Low-Level Design** principles, emphasizing clean code and separation of concerns.
- Leveraged design patterns including Factory, Singleton, and MVC to improve code maintainability, flexibility, and extensibility.
- Integrated **Lombok** to reduce boilerplate code and Maven for project build management and dependency resolution.
- Utilized Spring dependencies for IoC (**Inversion of Control**) and Dependency Injection to ensure loose coupling and testability.
- Configured and managed MySQL and SQL Server databases with optimized schemas and queries using **Spring JPA and JDBC**.
- Validated project APIs using **Postman** and maintained the complete codebase using Git and GitHub.

Snake and Ladder

Java, Spring Boot, Git

[Source Code](#)

- Designed and implemented Snake and Ladder game logic while ensuring accurate gameplay and adherence to the rule set.
- Created backend game functionality using **Command Line** interaction to display the game board, player positions, and game status.
- Applied object-oriented programming principles to organize the codebase and improve readability and maintainability.
- Conducted testing and debugging to identify and resolve functional issues.

Parking Lot System

Java, MySQL, Spring Boot

[Source Code](#)

- Implemented a robust **backend system** using Java and data structures to manage parking allocation and optimize search operations for vacant spots.
- Designed and developed a MySQL database schema to manage parking lot data, vehicle records, and financial transactions.
- Applied object-oriented principles to create a modular, scalable, and maintainable architecture.
- Hosted the project on GitHub for version control and continuous improvement.

TECHNICAL SKILLS

Languages	: Java, Core Java
Frameworks	: Spring Boot, Spring MVC, Spring Framework, Microservices, JPA, Hibernate
APIs & Security	: REST APIs, OAuth2, OIDC, JWT, mTLS, User based entitlements, Authorization/Client Credentials OIDC Flow
Databases	: SingleStore, MSSQL, MongoDB, Sybase, MySQL
DevOps	: Docker, Jenkins, CI/CD, Linux, Infrastructure Automation, Load Balancing
Observability	: OpenTelemetry, Loki, Logging, Monitoring, Autosys
Engineering	: Data Structures and Algorithms, Object-Oriented Programming, Low-Level Design, Design Patterns, Multithreading, Distributed Systems
Version Control	: Git, GitHub

CERTIFICATIONS

- [Data Structures and Algorithms by Scaler](#)
- [Java by Scaler Academy](#)
- [Databases and SQL by Scaler](#)
- [Introduction to Back-End Development by META](#)

ACHIEVEMENTS

- Worked as Vice-President of the Mathematics Club at Sathyabama Institute of Science and Technology during final year.
- [Qualified in CodeVita 2020 Season 9 with All India Rank 1520](#)