

Mradul Singhal | Software Engineer

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Summary

Software Engineer skilled in designing **scalable** microservices with **Spring Boot**, **Scala**, and **AWS**, experienced in **event-driven architectures** and **distributed systems**. Proven track record in **cost optimisation**, **system performance improvement**, and **mentoring**, with hands-on expertise in **cloud computing**, **system design**, and developing **highly configurable** applications.

Skills

Backend: Java, Scala, Spring Boot, Spring MVC, Spring Data JPA, Hibernate

Cloud & DevOps: AWS, Terraform, Docker, Kubernetes, Jenkins

Database: PostgreSQL, MongoDB, Apache Cassandra, Neo4j, Redis, MySQL

Tools & Frameworks: JUnit, Mockito, Freemarker Template

Others: REST APIs, Microservices, Swagger, Kafka, RabbitMQ, Scripting, Python

Frontend: React.js, Redux Saga, TypeScript

Experience

Software Engineer

Pune

MicroStrategy

Nov'24 – Present

- Comet — QA Automation Engine
 - Built an automation engine for Quality Engineers using **Spring Boot**, **React**, and **Fargate**, streamlining MicroStrategy environment testing and **reducing manual effort by 90%**.
 - Designed a custom Domain Specific Language (DSL) with Scala infix notation, enabling Quality Engineers to define test cases in a simplified, readable format.
 - Utilised **Fargate** to execute tests in isolated, language- and framework-agnostic environments.
 - Developed an intuitive interface for configuring, executing, and viewing test results via MicroStrategy Library.
- Optimised resource handling by stopping unused **EC2** instances, leading to a **45% cost reduction** for *dev* and *qa* environments.
- Reduced testing time by 75%** by implementing a checkpoint logic using **Aspect-Oriented Programming (AOP)** to track the progress of AMI creation, allowing for resuming from the last developer's desired step in case of testing multiple functionalities.
- Refactored legacy code to improve maintainability, promoting loose coupling and reducing technical debt, resulting in streamlined development.

Software Engineer – Intern

Remote

NxtPe

May'24 – Sep'24

- Replaced Amazon API Gateway with a custom **Spring Cloud Gateway**, **reducing cost by 90%** and enabling customisability and efficient routing for Ingress and Egress Gateways.
- Handled **request/response/URL transformations** using **Freemarker** templates, enhancing flexibility in data presentation.
- Improved system resilience by implementing **Circuit Breaker pattern** using **Resilience4j**
- Integrated 3rd party APIs following **REST principles**, ensuring efficient and reliable data retrieval.
- Configured **Keycloak** for user and 3rd party authentication and authorisation, ensuring secure access to resources.

Technical Instructor (Part-Time)

Agra

Crust to Core

Jan'23 – Jan'24

- Conducted live sessions on **Java**, **Spring Boot** fundamentals, **Data Structures and Algorithms**, and **Object-oriented Programming**
- Designed project-based learning modules for backend development, which increased student project completion rates and practical understanding.
- Mentored over 50 students**, enhancing their understanding of complex concepts and problem-solving skills.

Featured

2025: Published a blog post on **Processes and Threads** on Medium. [↗](#)

Projects

HiV [↗](#)

Dec'23 – Feb'24

Developed using **React.js**, supported by **Spring Cloud** microservices with **REST** communication. Implemented **OAuth2** and **OpenID Connect** for secure authentication and leveraged **PostgreSQL**, **MongoDB**, **Apache Cassandra**, and **Neo4j** based on their respective strengths.

Education

Dr. A.P.J. Abdul Kalam Technical University

Bachelor of Technology in Computer Science and Engineering

2020 – 2024