

Harshit Singh

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Objective

Backend developer with expertise in Spring Boot microservices, RESTful API design, and containerized deployments. Proficient in building scalable systems with comprehensive testing using JUnit and Mockito.

Education

The Pillars Public School, Gorakhpur, Intermediate from CBSE Apr 2021 – Mar 2023

Pranveer Singh Institute of Technology, Kanpur, BTech (CSE) | CGPA 8.17 Oct 2023 – present

Skills

Backend Development: Java, Spring Boot, Spring Security, Spring Data JPA, Hibernate, RESTful APIs, Microservices Architecture

Testing & Quality Assurance: JUnit 5, Mockito, Integration Testing, Testcontainers

DevOps & Containerization: Docker, Docker Compose, CI/CD, Maven, Gradle

Databases & Caching: MySQL, PostgreSQL, Redis (Caching & Rate Limiting), Database Design & Optimization

Programming Languages & Tools: Java, Python, SQL, Git, Postman, IntelliJ IDEA

Core Concepts: Data Structures & Algorithms, OOP, DBMS

Projects

LStats - LeetCode Analytics Platform

2024

- Architected microservices backend using Spring Boot for user management, authentication, and notifications
- Implemented JWT authentication with Spring Security
- Designed MySQL database schema with optimized indexing for users, friends, groups, and leaderboards
- Built RESTful APIs with proper error handling and validation
- Integrated WebSocket protocol for real-time chat, messaging, and notifications
- Technologies: Spring Boot, Spring Security, MySQL, FastAPI, WebSocket, Maven

APILimiter - API Rate Limiting & Monitoring Platform

2025

- Developed enterprise API rate limiting platform with Spring Boot supporting token bucket and sliding window strategies using Bucket4j
- Implemented distributed rate limiting using Redis with atomic operations for multi-instance consistency
- Implemented Spring AOP for cross-cutting concerns and custom @RateLimited annotations for declarative rate limiting
- Developed multi-tenant architecture with Spring Security
- Wrote comprehensive test suite using JUnit 5, Mockito, MockMvc, and Testcontainers for integration testing
- Dockerized application with optimized layered jar approach and Docker Compose orchestration
- Integrated Swagger/OpenAPI for API documentation and applied SOLID principles with design patterns
- Technologies: Spring Boot, Spring AOP, MySQL, Redis, Docker, JUnit 5, Mockito, Testcontainers, Maven, Swagger