

# 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