

# Vijay Kumar

BACKEND ENGINEER — JAVA · SPRING BOOT · REAL-TIME SYSTEMS

Faridabad, Haryana, India | +91 85399 99709 | vkumar.kumar31@gmail.com | vijaykumarcodes.space | github.com/VijayKumarCode | linkedin.com/in/vijaykumarcodes

Open to remote backend roles

## PROFILE

Backend Engineer specializing in **Java 17** and **Spring Boot 3** with extensive hands-on experience architectural-designing and deploying real-time distributed systems and automated CI/CD pipelines. Shipped **Nexus**, a production-live multiplayer platform capable of managing high-concurrency WebSocket sessions and persistent transactions. Proficient in concurrent data structures, database optimization, and high-fidelity production debugging. Seeking a remote backend software engineering position.

## TECHNICAL SKILLS

- LANGUAGES: Java 17, SQL, JavaScript (ES2022), HTML5, CSS3
- FRAMEWORKS & BACKEND: Spring Boot 3, Spring Data JPA, Spring Security, REST APIs, WebSocket (STOMP/SockJS), JWT, bcrypt
- DATABASES & ORM: PostgreSQL, Hibernate ORM, JPQL, H2 Database
- DEVOPS & CLOUD: Docker, GitHub Actions, Linux (Ubuntu), Oracle Cloud Infrastructure (OCI), systemd, Vercel, Render
- TOOLS & FOUNDATIONS: Maven, JUnit 5, Mockito, Git, Raw Sockets, Multithreading, Clean Architecture, OOP, DSA

## PROJECTS

### Nexus — Real-Time Multiplayer Game Platform

Live

nexusgame.space

GitHub

Java 17 · Spring Boot 3 · WebSocket (STOMP) · PostgreSQL · Spring Security · GitHub Actions · Oracle Cloud (Ubuntu VM)

- Engineered high-concurrency game loop state utilizing `ConcurrentHashMap` and atomic operations, eliminating data races across active real-time sessions.
- Architected custom WebSocket session lifecycle observers via STOMP/SockJS to handle connection state, user presence tracking, and room-scoped routing.
- Diagnosed and resolved a critical production crash caused by a JPQL enum inner-class mapping error (`User$UserStatus`), converting it to a named parameter query and stopping game move dropouts.
- Bypassed an outbound SMTP port-587 cloud block by decoupling JavaMailSender and implementing the Resend REST API over port 443, lowering mail delivery timeouts from 120s to <1s.
- Implemented a secure authentication workflow with Spring Security, state-managed JWTs, bcrypt password hashing, and tokenized email activations.
- Standardized a zero-touch CI/CD pipeline via GitHub Actions to run test suites, package executable JARs, transfer via SCP, and automatically restart the systemd daemon.

### Portfolio Website & Engineering Log

Live

vijaykumarcodes.space

GitHub

Vanilla JavaScript · HTML5 · CSS3 · PWA · Cloudflare Turnstile · Formspree · Vercel CDN Edge Network

- Designed a framework-less Markdown-to-DOM compilation workflow for a technical blog, ensuring an instantaneous loading cycle and zero Cumulative Layout Shift (CLS).
- Secured public-facing messaging routes by routing decoupled user interactions through Cloudflare Turnstile cryptographic verification and a serverless Formspree workflow.
- Preconfigured progressive web app (PWA) cache-control rules to optimize service-worker asset retrieval directly across edge points.

### TicTacToe — Network Multiplayer Engine

GitHub

Java · TCP Sockets · Multithreading · Concurrency

- Created a low-level TCP socket-based multiplayer application server from scratch handling active client traffic via isolated worker threads.
- Implemented multi-client thread pools and thread-safe shared states that structurally served as the architectural iteration proof for the Nexus WebSocket engine.

### DSA in Java — Documented Algorithm Library

GitHub

Java 17 · Data Structures · Algorithms · Complexity Analysis

- Authored a comprehensive repository of reference implementation files covering Trees, Graphs, custom Linked Lists, and advanced Sorting/Searching patterns.
- Profiled and cataloged exact Time and Space complexities using Javadoc-style modular headers to adhere to strict engineering standards.

## EDUCATION

Master of Computer Applications (MCA) Ajay Kumar Garg Engineering College (AKGEC) — Ghaziabad

Uttar Pradesh

Bachelor of Computer Applications (BCA) L.N. Mishra College of Business Management (LNMCM) — Muzaffarpur

Bihar