

Sumit Kushwaha

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Professional Summary

Computer Science undergraduate (expected Jun 2028) with production software development experience and hands-on **Java/Spring Boot backend** projects. Built REST APIs, distributed caching, rate limiting, event-driven services and concurrent systems using Redis, Kafka, PostgreSQL, Docker and automated testing.

Technical Skills

Languages: Java, SQL, Python, C++, C, JavaScript, TypeScript

Backend: Spring Boot, Spring MVC, Spring Security, Spring Data JPA, Hibernate, Node.js, Express.js, REST APIs, Microservices

Distributed Systems & Data: Apache Kafka, Redis, PostgreSQL, MySQL, MongoDB, pgvector, WebSockets, TCP networking, concurrency, multithreading

Cloud & DevOps: AWS (EC2/S3/Lambda), Docker, Linux, Git, GitHub Actions, CI/CD, Prometheus, Grafana

Testing & Core CS: JUnit 5, unit/integration testing, data structures and algorithms (DSA), object-oriented programming (OOP), system design, design patterns, debugging, API design, SDLC

AI Engineering: Spring AI, RAG, embeddings, LLMs, AI agents, Model Context Protocol (MCP)

Experience

Vikrant Novatech Private Limited

Feb 2026 – Aug 2026

Software Development Intern

- Developed production **REST APIs using Node.js and Express.js**, connecting application services and databases with web/mobile clients.
- Diagnosed and resolved backend and API integration defects through debugging, root-cause analysis and targeted testing.
- Delivered reusable full-stack features from requirements through testing and code review in an **Agile** development environment.
- Collaborated with backend and frontend engineers to implement and validate integrated application changes.

Projects

AI Engineering Agent Platform *Java, Spring Boot, Spring AI*

[GitHub](#)

- Built **Java/Spring Boot REST APIs** for LLM chat, RAG, AI agents, MCP tools and execution tracing.
- Implemented **Spring Security/JWT**, agent orchestration, multi-step tools, cancellation and guardrails.
- Built document/code ingestion with embeddings and **PostgreSQL/pgvector**; integrated Kafka and SSE streaming.
- Added **169+ automated tests** for API, agent and failure paths, plus **Prometheus/Micrometer** observability.

FlashScale – Distributed Caching & Rate Limiting *Java, Spring Boot, Redis*

[GitHub](#)

- Built a **Spring Boot/Redis cache-aside service** over PostgreSQL, deployed across **3 application replicas** behind Nginx using Docker Compose.
- Implemented **Redis SET NX locks and Lua-based unlocks** for cache-stampede protection, plus shared fixed-window API rate limiting (HTTP 429).
- Instrumented **Prometheus/Grafana** for latency, cache hits/misses and database reads; added k6 load-testing scenarios and CI/CD.

Concurrent Message Broker – Kafka-Inspired *Java, TCP, Multithreading*

[GitHub](#)

- Built a framework-free **Java broker** with producers, consumers, topics, partitions, offsets, replay and TCP clients.
- Implemented **partition-local ordering**, bounded thread pools, backpressure and asynchronous `CompletableFuture` APIs.
- Built crash-recoverable **append-only logs** with `FileChannel`, segment rolling, sparse indexes and CRC checks.
- Tested concurrency, persistence, TCP framing and malformed inputs with **JUnit 5 integration tests**.

Education

Vishwakarma Institute of Technology, Pune

B.Tech, Computer Science and Engineering (IoT, Cybersecurity & Blockchain)

Expected Jun 2028

CGPA: **9.01/10**

Guru Nanak Public High School and Junior College, Ballarpur

Higher Secondary (11th–12th)

Jun 2022 – Mar 2024

83%

Research & Achievements

- Presented “ESP32-Based Smart Environmental Monitoring System with Dual Display” at **IEEE CCGE 2026**.
- Co-authored and presented the **Healthub** research paper at **AIHW 2025**.
- Filed **two patent applications** in IoT and machine learning.