

Vaibhav Padghan

Crafting scalable, high-performance digital experiences.

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Portfolio

WORK EXPERIENCE (3 Years)

Tata Consultancy Services

Software Engineer

October 2023 - Present

- **Backend Development (Java/Spring):** Developed and maintained **Java/Spring REST APIs** for the health insurance claims module, implementing business logic and integrations for core claims-processing workflows.
- **Performance Optimization:** Analyzed and optimized **PL/SQL procedures and Java business logic**, resolving inefficient queries and processing bottlenecks to improve application performance in production.
- **Frontend Modernization:** Migrated legacy **JSP-based screens to React.js**, integrating **Redux** for state management and improving the maintainability and responsiveness of the internal application.
- **Database Optimization:** Performed **Oracle SQL/query tuning and schema-level improvements**, troubleshooting production database bottlenecks and resolving issues affecting application response times during peak processing.
- **Cloud & Caching:** Assisted with migration of application services from on-premise infrastructure to **AWS EC2/S3** and implemented **Redis caching** for frequently accessed master data to reduce repeated database queries.

PROJECTS

Real-Time Stock Trading Platform

May 2026

- **Order Matching Engine:** Built a Java-based order matching engine using **PriorityQueue** data structures to efficiently match buy and sell orders based on price-time priority.
- **Concurrency Control:** Implemented **optimistic locking with JPA/Hibernate** to handle concurrent order and portfolio updates and prevent inconsistent account balances.
- **Real-Time Updates:** Developed a **WebSocket-based market-data service using Spring WebFlux** to stream order and price updates to a React frontend.
- **Event-Driven Processing:** Integrated **Apache Kafka** to asynchronously process post-trade operations such as portfolio updates and notifications, keeping the core order-processing flow decoupled.

Distributed URL Shortening Service

Apr 2026

- **URL Shortening:** Designed and implemented a URL-shortening service using **Base62 encoding** and unique IDs to generate compact, collision-resistant short URLs.
- **Caching:** Implemented a **Redis cache-aside strategy** to serve frequently accessed URLs from memory and reduce database queries.
- **Scalable ID Generation:** Designed a thread-safe unique ID generation mechanism to support URL creation across multiple application instances.
- **Asynchronous Analytics:** Used **Kafka/RabbitMQ** to process click analytics asynchronously, keeping URL redirection independent of analytics processing.

SKILLS

- **Languages:** Java (Core, Multithreading, Streams API), PHP, C++, JavaScript (ES6+), TypeScript, SQL.
- **Backend:** Spring Boot, Spring Security, Spring Cloud, RESTful APIs, Microservices, Hibernate/JPA.
- **Frontend:** React.js, Redux Toolkit, Next.js, Tailwind CSS, Material UI, HTML5/CSS3.
- **Databases & Caching:** PostgreSQL, MongoDB, Redis, Oracle (PL/SQL), MySQL.
- **Tools & Cloud:** Git, Docker, AWS (EC2, S3), Maven, Postman, Linux.

EDUCATION

P.E.S Modern College Of Engineering

Bachelor of Computer Engineering - 9.25

Aug 2019 - June 2023

Certifications And Achievements

- **AWS Certified Cloud Practitioner**
- **HackerRank:** 5 star in problem solving, C++, Java, Python, SQL and Javascript
- **Leetcode:** 200+ problems solved