

# VAISHAK S

Backend Developer — Security-Focused

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## PROFESSIONAL SUMMARY

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Backend Developer with a security-first engineering mindset, specializing in building production-grade REST APIs and distributed systems using Java and Spring Boot. Hands-on experience designing high-concurrency backends with PostgreSQL, Redis, and Docker, applying patterns such as atomic distributed transactions, idempotency handling, and JWT-secured authentication flows. Brings a rare combination of software engineering depth and applied web security knowledge (OWASP Top 10, XSS, SQLi) — delivering APIs that are both performant and inherently resilient. Pursuing M.Tech in Cyber Security to deepen expertise at the intersection of backend engineering and application security.

## TECHNICAL SKILLS

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**Languages:** Java, Python

**Frameworks & Libraries:** Spring Boot, Spring Security, Spring Data JPA, Hibernate ORM, Maven

**Databases:** PostgreSQL, Redis (distributed caching & rate limiting)

**API Design:** REST APIs, JWT Authentication, DTO Patterns, Request Validation, Idempotency

**DevOps & Tooling:** Docker, Docker Compose, Git, Linux

**Security Knowledge:** OWASP Top 10, XSS & SQLi Mitigation, WAF Configuration, Security-by-Design

**Core Concepts:** Distributed Systems, ACID Transactions, Concurrency Control, Layered Architecture

## WORK EXPERIENCE

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**Web Security Analyst II** — Sitelock — A Sectigo Company, Chennai, India 03/2024 – 08/2025

- **Engineered and maintained security tooling infrastructure**, including WAF configuration and automated malware scanner pipelines, protecting hundreds of client web assets at scale.
- **Performed systematic code and configuration analysis** of web servers and applications to identify and remediate critical vulnerabilities including XSS and SQLi — directly applicable to secure API design.
- **Hardened CMS components, plugins, and themes** through structured code review and configuration auditing, developing a strong instinct for attack-surface reduction.
- **Authored detailed technical documentation** for Tier 3 escalations, translating complex vulnerability findings into reproducible remediation workflows — sharpening ability to communicate technical depth clearly.

## PROJECTS

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**Flash Sale Engine** | Java · Spring Boot · PostgreSQL · Redis · Docker ([github.com/Ox76hack/Flash-sale-engine](https://github.com/Ox76hack/Flash-sale-engine))

- Built a **high-concurrency flash sale backend** using Spring Boot, handling simultaneous purchase requests with distributed inventory management.
- Implemented **atomic inventory decrement via Redis** to eliminate race conditions and prevent overselling under concurrent load.
- Designed **REST APIs** for user management, product management, and purchase workflows using layered architecture and separation of concerns.
- Added **idempotency handling, duplicate purchase prevention, and distributed rate limiting** using Redis-based coordination patterns.
- Integrated **PostgreSQL with JPA/Hibernate** for persistent storage; applied global exception handling, request validation, and compensation logic for reliable distributed transaction flows.
- Containerized infrastructure with **Docker Compose** for reproducible local development environments.

**PayFlow — Secure Fintech Backend** | Java · Spring Boot · PostgreSQL · Spring Security · JWT · Hibernate · Docker ([github.com/Ox76hack/payflow](https://github.com/Ox76hack/payflow))

- Built a **production-style fintech backend** with RESTful APIs for user management, wallet operations, and money transfers using layered architecture principles.

- Implemented **transaction-safe money transfer workflows** using Spring @Transactional and PostgreSQL ACID guarantees to ensure financial data integrity.
- Developed **JWT-based stateless authentication** and secure login using Spring Security and BCrypt password hashing — applying security engineering directly to API design.
- Applied **DTO-based API design, request validation, and centralized exception handling** for clean, secure, and maintainable API contracts.
- Integrated **Spring Data JPA and Hibernate ORM** for entity mapping; used derived query methods and custom repository logic for efficient data access.
- Containerized PostgreSQL with **Docker Compose** using persistent storage volumes for consistent local development.

#### **Credit Card Fraud Detection** | Python · Scikit-learn · Logistic Regression

- Developed a logistic regression model to detect fraudulent transactions with high accuracy, applying **class imbalance techniques** (SMOTE/resampling) for reliable minority-class prediction.

## **PUBLICATIONS**

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### **Hybrid Network Security Model for Small and Mid-Sized Enterprises** — IEEE Xplore, Oct 2022

Co-authored a peer-reviewed paper proposing a novel hybrid security model to address key infrastructure challenges faced by smaller enterprises.

## **EDUCATION**

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**M.Tech Cyber Security (Online)** — IIIT Sri City

07/2025 – 07/2027

**B.Tech Electronics & Communication Engineering** — Amrita School of Engineering, Chennai 06/2019 – 10/2023

## **CERTIFICATIONS**

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**CompTIA Security+** — Valid through January 2027