

Aayush Lal Roy

Software Development Engineer

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Adaptable Software Engineer with 5 years of experience building scalable, secure backend systems across healthcare and retail-tech. Proficient in Java, Spring Boot, and distributed architectures. Proven ability to design authorization frameworks, API platforms, and GraphQL layers serving enterprise-scale products. Strong collaborator across cross-functional teams with a track record of shipping high-impact features end-to-end.

EXPERIENCE

Walmart Global Tech — Software Development Engineer III

August 2024 – Present

- Led **monolith-to-microservices decomposition** as part of a platformization effort, enabling independent scaling, faster development cycles, and isolated deployments per service.
- Architected and deployed an **API Linter microservice** validating API spec files against customizable, versioned rule sets — adopted across developer teams to enforce API design standards.
- Designed a **multi-platform JWT token system**, implementing the Strategy Pattern for platform-aware cache key generation with distinct session isolation models per product.
- Built a **shared authorization library** consumed by multiple services, refactoring monolithic auth into a Strategy Pattern with pluggable OAuth2 token validators via a factory-based resolution layer.
- Developed **end-to-end GraphQL APIs** (queries and mutations) across multiple domains — including type definitions, resolvers, transformers, and 73+ unit tests with 100% coverage.
- Built an **entity sharing system** enabling users to share dashboards, reports, and other resources with role-based access controls.
- Designed the **OPA (Open Policy Agent) architecture** and built a reusable library for policy and permission evaluation, adopted across multiple services. Authored policies for 3 identity services across 4 environments with 100% test coverage and automated deployment via GitHub Actions.
- Implemented **multi-tenancy support** across services with tenant-aware authorization and JPA Specification-based dynamic query composition.
- Migrated JWT encryption from symmetric to asymmetric keys, enhancing security and enterprise compliance.
- Designed reusable OpenAPI schemas with `$ref / allOf` composition, reducing schema duplication by ~90%.
- Leveraged **AI coding agents** with curated prompts, coding standards, and project-aware rules to accelerate API development lifecycle and boost team productivity.

Practo Technologies — Software Engineer

March 2021 – August 2024

SE Intern → SE-1 → SE-2

- Integrated **ABHA (Ayushman Bharat Health Account)** system with clinic software, achieving M1, M2, and M3 government certifications.
- Built an **IVRS flow** for appointment scheduling, increasing appointment conversion by **15%**.
- Automated SMS/email delivery optimization — dynamic operator selection based on delivery rate, latency, and cost.
- Developed a **Quota Management System (QMS)** microservice for creating and managing service quotas.
- Coordinated **POS (Pinelabs) integration** for clinic payment processing.
- Built a cross-OS **CLI tool** for spinning up Docker-based local dev environments simulating production infrastructure.
- Deployed open-source solutions company-wide: document signing (Documenso), AI sentiment analysis for doctor chats.
- Reduced UAT environment costs by **10%** via a Kubernetes pod-fitting monitor.
- Exposed 3rd-party APIs for the Appointment Management System (Qikwell).

Trendytech — Web Development Intern

January 2020 – March 2020

- Built "codersmaniac.com," a production-ready competitive coding platform with a custom tokenizer-based scoring system.

SKILLS

Languages	Java, TypeScript, PHP, JavaScript, Python, Rego
Frameworks	Spring Boot, NestJS, Express.js, Symfony, Flask
Data & APIs	GraphQL (Apollo Federation), REST, OpenAPI/Swagger, JPA/Hibernate, MySQL
Auth & Security	OAuth2, IAM, JWT (ES256), OPA, RBAC
Infrastructure	AWS, Docker, Kubernetes, CI/CD, Kafka, Git
Caching & Config	Distributed Caching, Vault / Secrets Management
Testing	JUnit 5, Mockito, Jest, OPA Test Framework
AI & Productivity	Prompt Engineering, AI-Assisted Development, Cursor, GitHub Copilot
Patterns	Microservices, Strategy, Event-Driven, PubSub, Async/Queue-Based

EDUCATION

Bachelor of Engineering in Computer Science — CMR Institute of Technology, Bengaluru (2017–2021) | CGPA: 8.09