

Ali B *Software Engineer*

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Professional Summary

Experienced Java Developer with 7+ years of expertise in designing and delivering scalable, high-performance software solutions using Java, Spring Boot, and microservices architecture. Proficient in developing secure REST APIs, building cloud-native applications on AWS, and leveraging containerization tools like Docker and Kubernetes. Well-versed in CI/CD pipelines, Agile methodologies, and DevOps practices with tools such as Jenkins, Git, and Maven. Strong background in system design, performance optimization, and cross-functional collaboration, with a passion for clean architecture, code quality, and delivering impactful, business-aligned solutions.

Skills

Core Java & JVM Expertise

- Java 8/11/17+ (Streams, Lambdas, Optional, CompletableFuture)
- Multithreading & Concurrency (ThreadPool, Executors, Synchronization)
- Memory Management (GC Tuning, Heap/PStack, JVM Profiling)
- Design Patterns (Singleton, Factory, Observer, Strategy)

Databases

- SQL: MySQL, PostgreSQL (Indexing, Query Optimization)
- NoSQL: MongoDB (Sharding, Aggregation), Redis (Caching)
- ORM: JPA Criteria API, Native Queries

Testing & Debugging

- Unit Testing: JUnit 5, Mockito, TestNG
- Integration Testing: TestContainers
- Performance Testing: JMeter, Gatling

Backend & Frameworks

- Spring Boot (Auto-config, Actuator, Profiles)
- Spring Cloud (Eureka, Zuul, Config Server)
- Hibernate/JPA (L2 Cache, N+1 Fix, Query Optimization)
- RESTful APIs (Swagger, OpenAPI, Pagination)
- GraphQL (Apollo, Schema Design)

Cloud & DevOps

- AWS: EC2, S3, Lambda, RDS, EKS (Kubernetes)
- Docker (Containerization, Docker Compose)
- CI/CD: Jenkins, GitHub Actions, GitLab CI
- IaC: Terraform, CloudFormation

Architecture & Scalability

- Microservices (Service Discovery, Circuit Breakers)
- Event-Driven: Kafka, RabbitMQ
- Monolith: Cloud Migration

Professional Experience

Senior Java Developer

NexusTech Solutions

- Designed and implemented a distributed transaction manager for microservices using Saga pattern with compensating transactions.
- Solved a production JVM crash by identifying and fixing a native memory leak in a third-party encryption library.
- Developed a custom Spring Boot starter for company-wide standardized metrics collection and monitoring.
- Optimized Docker container images to reduce startup time from 45s to 8s through JVM tuning and layered builds.
- Implemented a blue-green deployment strategy for zero-downtime releases of stateful services.
- Created a custom annotation processor for compile-time validation of API contract DTOs.
- Diagnosed and fixed a cluster-wide performance degradation caused by TCP packet fragmentation.
- Built a custom Gradle plugin to enforce architectural constraints across microservices.
- Designed a hybrid caching solution combining Redis and in-process caching with cache invalidation triggers.
- Built a custom Spring Batch item processor for handling malformed banking files.

Java Backend Engineer

Summit Financial Systems

- Reverse-engineered and documented a legacy fixed-income pricing system with no existing specifications.
- Implemented a custom connection pool for mainframe gateways that improved throughput by 99%.
- Developed a distributed lock manager using ZooKeeper for concurrent batch processing.
- Solved a database deadlock issue in account reconciliation by redesigning transaction boundaries.
- Created a custom JPA attribute converter for handling legacy COBOL copybook data formats.
- Implemented a circuit breaker pattern for external SWIFT network integrations.
- Optimized JPA entity mappings that reduced memory usage by 40% in batch processing.
- Designed a multi-tenant security filter chain supporting both JWT and SAML authentication.

Software Engineer

Urban Mobility Technologies

- Developed a custom Spring Cloud Config backend for managing feature flags across microservices.
- Implemented a priority queue system for real-time dispatch operations using Java's DelayQueue.
- Solved a geohashing performance bottleneck by implementing a quadtree spatial index.
- Created a custom Jackson serializer for efficient protobuf/JSON conversion in REST APIs.
- Debugged and fixed a race condition in driver location updates using Java's Phaser.
- Implemented a custom Spring Security OAuth2 provider for internal service authentication.
- Optimized JVM string deduplication to reduce memory footprint in route calculation services.
- Designed a bulkhead pattern for isolating payment processing from core routing logic.
- Built a custom Maven archetype for standardizing service scaffolding across teams.

Projects

Real-Time Payment Processing System

Tech Stack: Java 17, Spring WebFlux, MongoDB, Kafka, Kubernetes

- Designed a non-blocking payment gateway handling 15,000 TPS using reactive programming
- Implemented exactly-once processing semantics in Kafka consumer groups
- Solved distributed clock skew issues in transaction timestamping using hybrid logical clocks
- Developed a custom circuit breaker for third-party bank API integrations
- Reduced settlement time from 2 hours to near-real-time (under 500ms)
- Built a custom metrics collector using Micrometer and Prometheus
- Implemented a novel dead-letter queue strategy for failed transaction recovery

Clinical Trial Management Platform

Tech Stack: Spring Boot, FHIR, AWS Neptune, GraphQL, HIPAA Compliance

- Architected a patient enrollment system with complex eligibility rule engine
- Developed a GCP/AWS multi-cloud sync solution for research data
- Created an audit trail system meeting 21 CFR Part 11 compliance requirements
- Optimized GraphQL resolvers to handle deeply nested medical hierarchies
- Implemented a zero-knowledge encryption pattern for sensitive PHI data
- Built a custom FHIR-to-Relational mapper for legacy EHR integration
- Designed a study blinding mechanism for double-blind trials

Supply Chain Visibility System

Tech Stack: Quarkus, AWS Lambda, DynamoDB, EventBridge

- Built real-time shipment tracking with IoT device integration
- Implemented CQRS pattern for high-volume read/write operations
- Solved cold-start problem in serverless functions with SnapStart
- Created predictive ETA algorithms using historical route data
- Reduced cloud costs by 35% through DynamoDB capacity optimization

Smart Inventory Optimization System

Tech Stack: Quarkus, Python ML, Redis, Azure Functions, Event Sourcing

- Developed predictive stock replenishment algorithms using sales forecasts
- Implemented a CQRS pattern with separate read/write datastores
- Solved cache stampede problem during flash sales using probabilistic early expiration
- Built a digital twin of warehouse operations using event sourcing
- Created a custom DSL for business rules in inventory allocation
- Integrated computer vision for automated shelf inventory tracking
- Reduced overstock situations by 40% through ML-driven recommendations

Unified Ticketing Platform | Legacy Modernization

Tech Stack: Spring Boot, Angular, Kubernetes, Terraform

- Migrated monolithic VB6 system to cloud-native Java architecture
- Implemented CI/CD pipeline reducing release cycles from weeks to hours
- Developed responsive frontend with Angular Material and NgRx state management
- Created automated testing framework covering 85% of business flows
- Reduced P99 latency from 5s to 800ms through JVM and DB optimizations

Certificates

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| • Oracle Certified Professional | • VMware Spring Professional Certification |
| • AWS Certified Developer - Associate | • Certified Kubernetes Application Developer |
| • Confluent Certified Developer for Apache Kafka | |

Education

Bachelor of Science in Computer Science