

Yusuf Akcay

Full Stack Software Engineer

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Summary

Full Stack Software Engineer specializing in Backend Distributed Systems. Architected a microservices platform on Oracle Cloud sustaining 200+ inventory reservations/sec with <400ms latency. Eliminated race conditions and ensured data consistency via distributed locking (Redis) and asynchronous event streaming (Kafka).

Education

University of the People, Bachelor of Science in Computer Science Apr 2026

- **GPA: 4.0/4.0** (President's List)

Anadolu University, Associate of Applied Science in Computer Programming June 2022 – Apr 2026

Technical Projects

High-Concurrency Retail Engine | [GitHub](#) | [Live](#)

Distributed microservices platform (7 services, 129+ tests) - Java 17, Spring Boot 3.5, Kafka, Redis, PostgreSQL, Docker.

- **Concurrency & Distributed Locking:** Implemented Redisson-based distributed locks to serialize inventory mutations. Validated under k6 load testing: **15,000-unit stock depleted across 2,000 VUs with zero overselling** (P95 latency 400ms, error rate <0.01%).
- **Saga Pattern & Eventual Consistency:** Designed distributed transactions (Order → Inventory Reserve → Payment → Confirm/Compensate) via Kafka with compensating rollbacks. Implemented **idempotent consumers** using Redis SETNX to guarantee exactly-once processing.
- **Fault Tolerance:** Integrated Resilience4j **circuit breakers** with sliding-window failure detection, half-open probing, and differentiated fallback policies for critical vs. non-critical paths.
- **CI/CD & Observability:** GitHub Actions monorepo pipeline for multi-arch Docker builds on Oracle Cloud ARM; OpenTelemetry, **Prometheus**, **Grafana**, Loki.
- **AI Vector Search:** Semantic product search using Spring AI and pgvector for nearest neighbor discovery.

Real-Time Distributed Messaging Platform | [GitHub](#) | [Live](#)

Full-stack chat application featuring TypeScript, Next.js, GraphQL, Redis, PostgreSQL.

- **Modern Frontend Architecture:** Built with **Next.js 15 App Router** using **Server Actions** for auth flows and **Apollo split-link** routing subscriptions over WebSocket while queries use HTTP.
- **Real-Time Sync via 4 GraphQL Subscriptions:** Live message delivery and conversation state sync across clients using **subscribeToMore** and **useSubscription** with per-user **withFilter** authorization.
- **Scalable WebSocket Layer:** Stateless backend with **dual Redis Pub/Sub** clients (publisher + subscriber via ioredis) decoupling WS state from server instances for horizontal scaling.

Technical Skills

Languages: Java, TypeScript, JavaScript, SQL

Backend: Spring Boot, Nest.js, Node.js, Express, GraphQL, REST APIs

Infrastructure: PostgreSQL, MongoDB, Redis, Kafka, Docker, Serverless, Linux, Prometheus, Grafana, Testcontainers, OpenTelemetry

Frontend: React.js, Next.js, React Native, Tailwind CSS, Redux, Zustand