

Omar Sharif

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Summary

Backend engineer who built **cross-service data pipelines** serving **200K+ retailers**, migrated critical services from **PHP to Java** with **zero downtime**, and architected a **multi-tenant POS platform** with **17 modules** and **287+ API endpoints**. 4+ years designing **scalable, high-availability microservices** across e-commerce and fintech, with hands-on ownership of **distributed systems, event-driven architectures, and production incident resolution**. Seeking a Senior Software Engineer role to apply my expertise in **system design, API architecture, and technical leadership** to high-impact systems at scale.

Work Experience

Software Engineer II WalaPlus

📅 09/2025 – present 📍 CAIRO, EGYPT

- Designed and implemented a custom **Keycloak Email OTP authentication provider** using **Java SPI**, featuring OTP generation, email delivery, custom input UI, and resend capability — serving **2,000+ daily retailer authentications** and replacing dependency on third-party authenticator apps.
- Owned the full design and implementation of a third-party **AI agent integration (Dalel)**, including a **change-trigger validation pipeline** for voucher/offer sync eligibility, a **Lua-scripted Redis atomic rate-limiting tracker** with automatic rescheduling on quota exhaustion, and a **dynamic data mapper** translating internal schemas to the agent's API contract.
- Built **cross-service data synchronization pipelines** using **Kafka, Amazon SQS, and RabbitMQ** to keep WalaOffer and WalaOne services in sync with the core marketplace.
- Integrated with multiple voucher/offer providers (**OneCard, Like4Card, You Got a Gift, Panda**) across both the **PHP legacy stack** and new **Java microservices**, managing a catalog of **7,000+ active vouchers across 36 providers** and ensuring feature parity during migration.
- Revamped the **redemption service** using the **Strategy pattern** and **feature flags** to support simultaneous operation against both legacy and new database schemas, handling **high-volume daily redemptions** with zero-downtime rollout and full backward compatibility.
- Led the migration of the **Catalog Service from PHP to Java**, owning the service responsible for catalog listing and search endpoints serving **3,000+ active retailers (10,000+ total)**. Built a **WebEngage catalog sync flow** connecting to both legacy and new databases with a **unified query function** outputting provider/country-filtered **CSV files** for marketing automation ingestion.
- Authored **data migration scripts** and developed **Laravel Artisan CLI commands** for data reconciliation, synchronization, and issue remediation across legacy and new databases in production environments.
- Wrote production-grade **Redis cleanup scripts** with **SCAN-based key discovery** and **atomic parallel deletion using Lua validation** to manage Horizon queue job accumulation. Served as a key point of contact for **production incident monitoring, debugging, and resolution**.
- Maintained and enhanced **legacy PHP software** through bug fixes and new features while utilizing **Jenkins** for CI/CD deployment workflows and release automation.

Software Engineer II Maxab E-Commerce & Fintech

📅 09/2024 – 09/2025 📍 MAADI, CAIRO, EGYPT

- Contributed to MaxAB's migration from a legacy Laravel monolith to a **Spring Boot microservice-based architecture**, working within the **Launching Squad**.
- Worked across **7 microservices**, each supporting **6 tenants**, taking full ownership of backend flows that serve **tens of thousands of daily transactions**.
- Migrated the **product catalog** to a dedicated Spring microservice using **MongoTemplate** for multi-tenant, multi-localized queries on **MongoDB**.
- Built and maintained services backed by **PostgreSQL**, ensuring consistency across relational and NoSQL data systems.
- Delivered the **"Edit Orders"** feature for the **Marketplace microservice**, scaling to serve **2,200+ retailers** in a single area as part of a platform supporting **200,000+ retailers** nationwide.

Work Experience

- Designed and integrated a **multi-tenant Firestore-based cart system** using raw Firestore templates, supporting dynamic tenant isolation and multi-locale interactions.
- Developed and managed **real-time data pipelines** using **Kafka** and **Kafka Connect**, reducing replication lag by over **90%** and improving inter-service reliability.
- **Refactored the Target Offers Service** to support **multi-tenancy** with **multi-database** (database per tenant) and **multi-language** capabilities. Implemented language selection via **tenant header** or **lang header** if provided. Enhanced the integration testing suite to cover multi-tenant operations and increased coverage with test cases simulating parallel processing. Replaced SQS with Kafka-based streaming, reducing sync delays from **minutes to near real-time**, and exposed new APIs consumed directly by the Angular dashboard.
- Built an **asynchronous Excel processing pipeline** for large file uploads (20,000+ rows), using **S3**, **cron jobs**, and **5,000-row batching** with locking, eliminating DB lock incidents and reducing processing time by **~75%**.
- Provided technical support across squads, especially to the **B2B Squad**, and participated in **quarterly on-call rotations** to ensure service uptime and production stability.

Software Engineer II Codelytical

📅 10/2021 – 09/2024 📍 6TH OF OCTOBER, EGYPT

- Led backend development and optimization of POS and RMS products, resulting in a 70% reduction in server resource usage.
- Managed end-to-end server administration, deployment, and performance tuning.
- Collaborated with cross-functional teams to design and implement new features, enhancing product functionality and user experience.
- Created robust database schemas, implemented triggers, and ensured data normalization, improving data integrity and access speed.
- Developed and integrated RESTful APIs, facilitating seamless communication between system components.
- Built a dynamic Kitchen Display System (KDS), which decreased order preparation time by 40% and increased the ordering rate by 150%.
- Architected a Messenger Ordering Bot integrated with ManyChat, streamlining order processing and enhancing customer engagement.
- Implemented an ECR Integration to reduce human interaction with Bank POS Payment Terminals and enable self-ordering kiosks to process on-spot payments.

Key Achievements:

- Spearheaded the implementation of Web Sockets, transitioning from API polling and providing real-time updates.
- Significantly improved kitchen operations with a cloud-controlled KDS that displayed real-time order and state changes.
- Reduced payment issues and enhanced customer experience with the ECR Integration, allowing direct payments at self-ordering kiosks.

Software Engineer I Trade Point

📅 09/2020 – 08/2021 📍 FAYOUM, EGYPT

- Successfully deployed and managed PBX systems for various customers, ensuring reliable and efficient communication solutions.
- Developed full-stack software solutions using Flutter for the client-side and Laravel for the backend, delivering high-quality products on time.
- Provided comprehensive debugging and support services for PBX and Loyalty System customers, maintaining high customer satisfaction.
- Integrated PBX systems with centralized CRM, streamlining operations and enhancing customer relationship management.
- Designed and implemented a Loyalty System with Laravel and Flutter, boosting customer retention and engagement.

Key Achievements:

- Developed custom plugins for PBX system integration with LDAP, centralizing authentication and improving security.
- Strategically planned and executed the database design for the Loyalty System, ensuring optimal performance and scalability.

Skills

Programming Languages:

Java, PHP, Dart, JavaScript, SQL, Lua, Bash

Frameworks & Libraries:

Spring Boot, Spring Security (OAuth2), Laravel, Flutter, Keycloak Admin Client / SPI, Flyway, MapStruct, ShedLock, JUnit, Mockito, Cucumber

Databases & Caching:

PostgreSQL (PostGIS), MongoDB, MariaDB, Firebase Firestore, Redis (Lua scripting, caching)

Cloud & DevOps:

AWS (S3, IAM, Secrets Manager, ECS, EKS, ALB), Google Cloud (GKE, Cloud Run, Cloud Build, Cloud SQL), Docker, Kubernetes (Kustomize), HashiCorp Vault, Elastic Stack (Logstash), Jenkins, Maven, Sentry, NewRelic, Git, Linux, ArgoCD

Architecture & Concepts:

Microservices, Multi-Tenancy (DB-per-tenant), Event-Driven Systems,DDD, RESTful API Design, OpenAPI-First Code Generation, Asynchronous Processing, Distributed Systems, Multi-Locale / RTL Support, Apache APISIX

Messaging & Integration:

Apache Kafka, Kafka Connect, Debezium, RabbitMQ, Amazon SQS, WebSockets (STOMP)

Testing & Quality:

TDD, Integration Testing (TestContainers, REST Assured), Unit Testing, Automation Testing, Cucumber

Projects

OrdRun - POS

📅 present

- Architected **OrdRun**, a **multi-tenant restaurant POS platform** comprising a **modular monolith (17 modules)**, a standalone **Discovery Service**, and **4 client apps** (POS, KDS, Dispatch, Admin Portal) — built on **Spring Boot 3, PostgreSQL, Redis, Flutter, and Nuxt 3**, exposing **~287 API endpoints** across **56 database entities**.
- Engineered a **database-per-tenant isolation** strategy with a dedicated **Discovery Service** that automates **PostgreSQL database provisioning, Keycloak realm/client creation, and Flyway schema migrations** per tenant — with **plan-based feature flags and usage limits** (JSONB overrides) supporting tiered pricing tiers. POS backend resolves tenants at runtime via subdomain/header routing with **Redis caching** and **@TenantFanoutScheduled** cross-tenant scheduling.
- Designed an **event-driven order lifecycle** with **11 statuses**, real-time **WebSocket (STOMP)** updates across 5 topics with auto-reconnect, and an **idempotency framework** using SHA-256 request hashing, response caching, and TTL-based cleanup.
- Built **cohort-based pricing** with zone-aware assignment, parent inheritance, and variant/modifier price overrides, plus **RBAC** with **50+ permission codes** across 19 groups enforced via custom **@RequiresPermission** annotation and AspectJ.
- Implemented **PostGIS polygon delivery zones** with Leaflet map editor, Arabic RTL receipt PDF rendering, OpenAPI-first code generation for 34 controllers, ShedLock distributed scheduling, and Kubernetes deployment with Kustomize overlays, **Apache APISIX API Gateway, ArgoCD GitOps delivery**, and HPA autoscaling.

Education

Computer Science | Bachelors

October 6 Higher Institute of Computer Science and Information Systems

📅 08/2018 – 06/2022

Publications

📅 07/2025

From God-Class to Clean Architecture in Flutter

<https://medium.com/@osharif/from-god-class-to-clean-architecture-in-flutter-9b93d50c16b3>

📅 01/2025

How I Integrated Firestore Into a Multitenant Spring Boot Microservice (With an Unconventional Schema) **Medium**

<https://medium.com/@osharif/how-i-integrated-firestore-into-a-multitenant-spring-boot-microservice-with-an-unconventional-318040b8bb3f>