

Akram Trabelsi Karoui

Full-Stack & Cloud Engineer | Java / Spring · NestJS · React / Flutter · Kubernetes

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PROFILE

Full-stack and cloud engineer with 4+ years building distributed platforms in production, from web and mobile apps to cloud backends. Specialised in Java/Spring microservices, event-driven architectures (Kafka), real-time systems (WebSocket) and Kubernetes deployments automated through CI/CD. Former Team Lead, delivering end to end with NestJS, Django, Laravel, React and Flutter, with security built in (JWT, Keycloak SSO, OWASP Top 10).

TECHNICAL SKILLS

Backend	Java, Spring Boot, Spring Cloud (Gateway, OpenFeign), WebClient, Liquibase, Python, FastAPI, Django, Flask, NestJS, Laravel / Symfony, REST APIs, GraphQL
Messaging & real-time	Kafka, WebSocket, Firebase Cloud Messaging
Data	PostgreSQL, MySQL (distributed), MongoDB, Redis, S3 object storage, Airflow, Spark, dbt, Databricks, Cube.js, Metabase
Cloud & DevOps	Kubernetes (Deployments, StatefulSets, Ingress), Docker, Harbor, Nginx, Cloudflare, Linux, GitHub Actions, GitLab CI/CD, Jenkins, Azure DevOps, OVH, AWS (EC2), Azure, GCP
Security	JWT, HTTPS/SSL (Let's Encrypt), Keycloak SSO, RBAC (Laravel Sanctum), OWASP Top 10, SAST/DAST, Trivy, OWASP ZAP
Quality & architecture	Microservices, Clean Architecture, SonarQube / SonarCloud, Playwright, Vitest
Front & mobile	React, Angular, TypeScript, Flutter / Dart

PROFESSIONAL EXPERIENCE

AI Mobility Solutions | Backend & Cloud Engineer 03/2025 – present

SQYFLEX: cloud-native platform for autonomous shuttle operations (bookings, route optimisation, field operations), built on a Java/Spring microservices architecture.

- Designed a scalable microservices architecture (Spring Boot, Spring Cloud Gateway) with synchronous and asynchronous service-to-service communication (Kafka, OpenFeign, WebClient).
- Built a constraint-based dynamic scheduling engine to dispatch the fleet (3 real + 2 simulated shuttles): ~80% of requests accepted with no delay, handling real-time disruptions (delays, execution queues, automatic recovery).
- Developed secure APIs (JWT, HTTPS) used by the shuttles to scan passenger QR codes live; real-time tracking over WebSocket and fleet notifications (Kafka, Firebase).
- Migrated from VPS to Kubernetes with zero downtime: Deployments, StatefulSets, Ingress, S3-compatible object storage, environment management and health probes.
- Automated releases with CI/CD (GitHub Actions) and secured production delivery (Nginx, SSL).
- Built the data and analytics pipeline (Airflow, Spark, dbt, Cube.js, Metabase; Databricks POC) for operations monitoring.

Java · Spring Boot · Spring Cloud · Python · FastAPI · Kafka · PostgreSQL · Redis · Kubernetes · Docker · Nginx · GitHub Actions · OVH · S3 · Airflow · Spark · dbt · Firebase · Angular

- Next-generation life insurance platform (AI-assisted investment and portfolio management): modular Spring Boot / Django architecture increasing peak-load throughput by 30%.
- Real-time financial data sync over WebSocket on distributed MySQL: 10,000+ concurrent users at < 200 ms latency.
- Secured authentication with Keycloak SSO and OWASP Top 10 compliance, blocking 100+ unauthorised access attempts per month.
- Automated CI/CD pipelines (GitLab CI, Docker, Azure DevOps): release time cut from 2 h to 15 min with zero downtime.
- Set up self-managed VPS infrastructure (Nginx, Harbor registry, Let's Encrypt SSL): 99.99% uptime for staging and pre-production.
- Refactored legacy code and optimised ticketing module algorithms: 40% faster processing.
- Led a cross-functional engineering team; wrote specs and architecture docs for Finance, R&D and business stakeholders: project turnaround reduced by 25%.

Spring Boot · Django · Distributed MySQL · WebSocket · Keycloak · Azure · Docker · Harbor · Nginx · GitLab CI · React

- Optimised NestJS backend services: 60% faster computation and improved scalability for applications processing 10M+ transactions per year.
- SaaS for medicine storage and distribution, deployed in 15+ healthcare facilities: 40% less manual processing.
- Remote services platform (telebanking, medical advice): 75% increase in customer engagement.
- Training centre management system (back office, mobile app, website): 40% less admin workload across 120+ enrolments.

NestJS · React · Flutter

- Wash.ME: app for a network of 7,800+ connected laundrettes in Europe (machine availability, live cycle tracking, notifications): 100,000+ users in France, customer satisfaction up 30%.
- Designed a software security management solution protecting the company's products (NestJS APIs, Flutter frontend).
- Mentored 7 final-year engineering interns: 90% project completion, 5 hired full-time.

NestJS · Flask · React · Flutter

PROJECTS

- Architected a white-label, multi-flavor app (one codebase, many brands) with a NestJS backend, real-time WebSocket messaging and integrated payments: 1,500+ payments in the first quarter.
- Booking overlaps reduced by 60%; rated 4.7/5 on Google Play.

NestJS · WebSocket · Firebase · Flutter

- Dashboard for e-commerce merchants to compare rates, book and track shipments across multiple couriers; Laravel API deployed with Laravel Forge behind Cloudflare.

Laravel · SQL · React · Laravel Forge · Cloudflare

EDUCATION

09/2019 – 06/2022

CERTIFICATIONS

- Docker For Beginners (KodeKloud, 2022)
- Rust Programming (KodeKloud, 2025)
- Professional Scrum (Scrum.org, 2022)
- Communication & Interpersonal Skills (PMI, 2022)

LANGUAGES

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|----------------|--------|
| Arabic | Native |
| French | Fluent |
| English | Fluent |