

Amr Abdelmaqsoud

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SUMMARY

Software engineer with ~2.5 years of experience across backend systems, developer tooling, and full-stack applications. Experienced in Java/Hibernate, Go, and Python. Active open-source contributor to Apache Kafka, Jitsi Meet, the PostgreSQL ecosystem (pgmoneta), CNCF projects (Kubeflow, Meshery), and WebRTC infrastructure (Pion). Ships performance-sensitive systems, workflow orchestration engines, and tools used by real people.

TECHNICAL SKILLS

Languages: Java, Go, Python, JavaScript / TypeScript, C/C++, OCaml

Backend: REST APIs, gRPC, Microservices, Kafka, Hibernate, Spring Boot, WebSockets, Concurrency, Spring AI, Spring Data, Spring AOP, Spring Security

Databases: PostgreSQL, Neo4j, Redis

Infra: Docker, Kubernetes, AWS (S3, EC2), Nginx, CI/CD, Prometheus, Grafana

Frontend: React, Vue.js, Next.js, React Flow

EDUCATION

B.S. Computer Engineering | Cairo University

Top 4 Finalist, Advanced Database Graduation Project (out of 33 teams)

Study Abroad (Scholarship) | San Jose State University

Fall 2022

Web Development (EWD), Intake 46 | ITI

Oct 2025 – Present

EXPERIENCE

Software Engineer | IKEA

Oct 2024 – Nov 2025 | Cairo

- Built internal Java/Hibernate/PostgreSQL services for 1,000+ employees handling 10,000+ daily transactions; containerised and deployed on Kubernetes.
- Led end-to-end feature delivery, redesigning workflows to reduce manual overhead by 40% and improve operational efficiency by 25%.

Full Stack Developer (Contract) | Fedni

Nov 2024 – Sep 2025 | Cairo

- Led migration from VanillaJS to React, cutting bugs by 35% and shipping 8+ features. Built real-time collaboration via WebSockets for 50+ concurrent users.

PHP Developer (Part-Time) | CrossWorkers

Jun 2024 – Nov 2024 | Cairo

- Migrated platform from PHP 5.6 to 7.4/Laravel, shifted frontend modules to Vue, and optimised 15+ SQL queries for 30% faster responses.

INTERNSHIPS

Software Engineer (Intern to Part-Time) | Siemens

Jun 2023 – Mar 2024 | Cairo

- Built data visualisation platform in Python/Dash aggregating real-time results from 5+ sources for 30+ engineers.
- Developed TinyLFU caching with custom eviction policies for internal dashboards — work that extended the internship to a part-time role.
- Automated reporting pipeline reducing manual analysis by 60%.

Software Engineer Intern | Bitnine Global (Apache AGE)

Mar 2023 – Nov 2023 | Remote

- Extended Apache AGE Viewer with graph visualisation features and built a Cypher query builder for the graph database interface.

Python Intern | Master Micro

Jan 2023 – Mar 2023 | Cairo

- Python development and testing across internal tooling projects.

OPEN SOURCE CONTRIBUTIONS

[apache/kafka](#)

- Added buffer switching observability metrics to the codebase, improving visibility into buffer switching failures.

[Jitsi Meet](#)

- Fixed microphone bug affecting audio capture. Implemented polling feature for meeting participants.

[pgmoneta \(PostgreSQL\)](#)

- Full S3 backup support end-to-end: rebuilt upload path, extended HTTP client, optimised workflow. Mentored by senior PostgreSQL contributor.

[Pion/Turn \(WebRTC\)](#)

- Connection serialiser maintaining uniform client footprint across multiple simultaneous connections, reducing CPU and memory overhead by ~30% (under review).

[Meshery / Kubeflow \(CNCF\)](#)

- Kubernetes operators, UI fixes, and caching optimisations for Meshery operator.

[Watermill](#)

- Fixed concurrency bug with shared slices in scaled multi-threaded applications.

Other

- pg_bulkload (config DSL adopted upstream), pgexporter, optimagic (dynamic module loading).

PROJECTS

[Battle of Agents](#) *[Spring Boot, RabbitMQ, Redis, Kafka, k8s, Prometheus, Grafana, Tempo, Eruka, Spring AI]*

- AI prompt-routing platform with Looping prompting: Spring Cloud Gateway fans prompts to 3 LLM agents (Java/Go/Rust) via RabbitMQ fanout exchanges with competing-consumer groups
- Agents query DeepSeek API with unique personalities; response-service collects results in Redis via HSET, frontend polls for completion. Supporting loop back and refinement.
- Full observability triad: Prometheus scrapes /actuator/prometheus, Loki via Promtail ingests container logs, Tempo receives OTLP traces from every hop
- Dual deployment: Docker Compose (local dev) with 14 containers, Kubernetes (kustomize) with Ingress routing through Gateway; Eureka service discovery, Spring Cloud Stream messaging with W3C trace context propagation

[Flow It](#) *[Go, React Flow, Kafka, WebSockets]*

- Full-stack Go workflow engine processing 1,000+ tasks/hour. Replaced Kafka fan events with claim-check tokens, cutting server costs while keeping resilience. React Flow UI for 50+ node pipelines. (Private)

[Collaborative Drawing](#) *[WebSockets, Go, Concurrency]*

- Conflict-aware undo/redo for a shared real-time canvas (1,000+ concurrent users), based on a classic concurrency control paper. Collision resolution and memory management for a production workspace. (Private)

[Sniffer](#) *[TypeScript, macOS, Raycast API]*

- macOS Raycast extension scanning local networks and identifying connected devices with IP/MAC addresses and performance estimates. ~800 downloads on the Raycast Store.

[AOC 2025 in OCaml](#) *[OCaml, Nushell]*

- Advent of Code 2025 solutions in OCaml and Nushell, picked up both languages from scratch for the challenge.