

Ammar Hamdi Hammouch *Backend Engineer*

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PROFESSIONAL SUMMARY

Backend engineer with three years of production experience designing asynchronous systems, background worker queues, and core regulatory integrations. Developed a durable workflow runtime on Postgres, pluggable API middleware for ZATCA Phase 2 compliance, and automated ingestion pipelines using NestJS, Redis, and BullMQ. Focuses on writing predictable, highly resilient multi-tenant architectures using TypeScript and Python across GCP and AWS environments.

EDUCATION

Bachelor in Computer Science, Jazan University
GPA: 4.86 / 5 — First Class Honours

2021 – 2025

PROFESSIONAL EXPERIENCE

Software Engineer, *Entropy*

09/2025 – Present

LLM evaluation platform benchmarking Arabic-language model performance.

- Built a microservices ingestion pipeline for LLM training datasets: upload verification and corruption scanning, format validation for CSV, XML, and JSON, metadata quality checks, Label Studio annotation integration, and BullMQ + Redis job orchestration. Datasets move from upload to annotated export with no manual step between stages.
- Connected an internal RAG chatbot to Microsoft Teams and Slack via FastAPI — connection management, reconnection on drop, and query routing to an indexed internal knowledge base.
- Contributing to dataset management, annotation pipelines, and model scoring infrastructure for the Arabic-language LLM benchmarking platform.

Integration Specialist, *Thmanyah*

01/2025 – 05/2025

Media and podcast company. Internal systems across HR, TA, and Marketing.

- Designed a multi-source aggregation engine pulling from Tally, Google Forms, Airtable, and Excel into an internal CRM. Configurable flows similar to n8n, auto-distributed performance reports, job infrastructure on BullMQ + Redis, and roughly 60% less manual reporting time.
- Built an internal HR platform covering payroll, notice periods, and 3-month probation evaluations — PDF report generation via Puppeteer, job queuing on BullMQ + Redis, and heavy schema migration work on Drizzle ORM.

React Native Developer, *Motmaina Medical Center*

04/2024 – 12/2024

Telehealth consulting platform for mental health.

- Built the React Native app end to end — state architecture managing health session state, patient–doctor handoffs, and booking flows across the full care cycle.
- Built the admin dashboard in Next.js with React Query (hydration, interceptors, SSR, query invalidation) for real-time visibility into sessions, providers, and clinical activity.
- Integrated real-time chat and a voice/video SDK; AWS S3 + Lambda for secure media upload and processing.

Technology Integration Intern, *Reachware*

08/2023 – 04/2024

iPaaS platform serving SMB and enterprise clients across the Middle East.

- Worked on ZATCA e-Invoice Phase 2 (FATOORA) compliance integration: XML schema validation, cryptographic invoice signing, and real-time clearance against the ZATCA API, aligning client ERP systems with Saudi tax authority requirements.
- Built data integration pipelines between Snowflake and ServeMe for financial reporting and analytics.
- Contributed to Oracle NetSuite and Oracle Fusion ERP integration architecture, focused on finance module sync between the two systems.

Enterprise Application Developer, *COMT*

08/2022 – 08/2023

F&B technology.

- Architected a full POS platform from scratch, comparable to Foodics and Rewaa: inventory, product catalog, and categories built into a transaction cycle that runs from entry through order, payment, and receipt in under 30 seconds.
- Built offline-first architecture with real-time sync — the system stays operational through network interruptions and reconciles when the connection returns. The sync engine uses priority-weighted queuing so orders drain ahead of analytics telemetry.

PROJECTS

IterateForge , *Durable Workflow Engine on Postgres*

Durable workflow engine in TypeScript that runs inside a **Node** process on Postgres with no external orchestrator. Journals every step result and suspension point so a **workflow** killed mid-execution **resumes** from its last completed step across crashes and redeloys — not from the beginning. Memoized step primitives skip **re-execution** when inputs haven't changed; durable sleeps survive process restarts; external signals wake waiting workflows. Flow versioning catches replay-incompatible edits at registration so a schema change that would corrupt in-flight runs is rejected before it reaches production.

Flow Studio , *Webhook Aggregation and Document Engine*

An automated **pipeline engine** that connects form providers (Google Forms, Tally, Typeform) to **multi-step custom workflows**, transforming submissions into highly customized PDF documents. It routes outputs automatically to external destinations like webhooks, CRMs, or email platforms. Built to be highly resilient, the architecture isolates lightweight tasks from heavy, resource-intensive PDF rendering into separate queues.

ZATCA Phase 2 E-Invoicing Middleware

Pluggable **API middleware** that connects existing **POS** and **ERP** systems to Saudi Arabia's **ZATCA** tax platform. It bridges the gap between standard software and government compliance: client systems send standard JSON, and the middleware transforms it into the strict, cryptographically **signed XML** (UBL 2.1) that ZATCA demands. A Node.js orchestration tier handles ingestion and retry queues, while a stateless Java/Spring Boot core applies digital signatures and generates compliance QR codes. It automatically routes **B2B** invoices for real-time clearance and B2C invoices for reporting.

SKILLS

Languages

TypeScript, Python, JavaScript, SQL

Infrastructure and Queuing

Redis, BullMQ, Kafka, RabbitMQ, Docker, Webhooks

Durable Execution and Orchestration

Restate, graphile-worker, Postgres-backed state machines, BullMQ

Backend Frameworks

Node.js, NestJS, FastAPI

Databases

PostgreSQL, MySQL, MongoDB, Firebase Realtime DB, Snowflake

Cloud

GCP (Cloud Run, Cloud Functions, Pub/Sub, Firebase), AWS (S3, Lambda)

CERTIFICATIONS

AWS Cloud Practitioner CLF-C02 — Issuer: AWS

LANGUAGES

Arabic — Native, English — Professional