

Ammar Hamdi Hammouch *Software Engineer*

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PROFESSIONAL SUMMARY

CS grad with three years of production work spanning backend architecture, mobile applications, and enterprise integrations. Builds high-reliability asynchronous systems that handle heavy computational and compliance loads—including a leaderless webhook-to-document DAG pipeline driven by Postgres row locks and an event-driven LLM evaluation backend running on NestJS, Redis, and BullMQ. Experienced with Saudi regulatory engineering, deploying pluggable API middleware for ZATCA Phase 2 compliance.

EDUCATION

Bachelor in Computer Science, Jazan University

2021 – 2025

GPA: 4.86 / 5 — First Class Honours

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.

- 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.
- 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, and roughly 60% less manual reporting time.

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.
- Built a business intelligence layer with cloud-synced analytics dashboards, inventory management architecture, and session handling to support operational decision-making.

PROJECTS

Balsam: LLM Evaluation Pipeline

LLM evaluation platform, built on **NestJS, Redis, and BullMQ** to handle dataset benchmarking **asynchronously**. Processes dataset **ingestion** through automated format verification and metadata **quality checks**, pushing valid payloads into Redis-backed worker queues. The pipeline routes data for **human-in-the-loop** annotation via Label Studio and orchestrates the concurrent execution of three core evaluation metrics: ROUGE, Accuracy, and LLM-as-a-Judge.

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, JavaScript, Python, SQL

Infrastructure and Queuing

Redis, BullMQ, RabbitMQ, Kafka, Firebase

Databases

PostgreSQL, MySQL, MongoDB, Firebase Realtime DB, Snowflake

Durable Execution and Orchestration

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

Integration and Security

REST APIs, Webhooks, OAuth/JWT

Frameworks

React.js, Next.js, React Native, Flutter, FastAPI, NestJS

Cloud

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

Data Engineering

Airflow, PySpark, DuckDB, TimescaleDB

Tools

Git/GitHub, Docker, Puppeteer, Drizzle ORM, Label Studio, CI/CD

CERTIFICATIONS

OCI Certified AI Foundations Associate — Oracle, October 2025
AWS Cloud Practitioner CLF-C02 — AWS

LANGUAGES

Arabic: Native | English: Professional