

# Mohamed Salem Younes

## Backend-focused Software Engineer

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Backend-focused software engineer with 3+ years of production experience across healthtech, fintech, and multi-tenant SaaS. Core stack is **Python/Django REST Framework** and **NestJS/TypeScript** on **PostgreSQL**, with real depth in schema design, secure API design, and AI-assisted automation — LLM-backed OCR pipelines, RAG assistants, and Gemini-driven data matching. Comfortable owning the whole path to production: **AWS** and **GCP**, **Docker**, **Terraform**, and CI/CD, with a bias toward data security and testing discipline over shipping fast and hoping.

### TECHNICAL SKILLS

|                 |                                                                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Languages       | Python, TypeScript, JavaScript, Go, C#, SQL                                                                                                                         |
| Frameworks      | Django, Django REST Framework, NestJS, Prisma, React, Next.js, OpenCV, Pandas, NumPy                                                                                |
| Cloud & DevOps  | AWS (ECS/Fargate, RDS, S3, SQS, Lambda, EventBridge), Google Cloud Platform, Docker, Terraform, GitHub Actions, Bitbucket Pipelines, Nginx, Gunicorn, Celery, Redis |
| Databases       | PostgreSQL, MySQL, SQLite, MongoDB, Supabase                                                                                                                        |
| AI & Automation | Gemini LLM integration, Retrieval-Augmented Generation (RAG), OCR pipelines (PaddleOCR, EasyOCR, Tesseract), prompt engineering, AI-assisted prototyping            |
| Practices       | REST APIs, WebSockets, JWT & OAuth, RBAC, multi-tenancy, Swagger/OpenAPI, SonarQube, Jest, Postman, Jira, Linux                                                     |

### PROFESSIONAL EXPERIENCE

Software Engineer · SaySoft

Dec 2025 – Present

- Build and maintain multi-tenant SaaS platforms — property/union management, live-class tutoring, and fleet management — using **NestJS**, **Prisma**, **PostgreSQL**, and React/TypeScript, deployed on **AWS** (ECS Fargate, RDS Multi-AZ) with **Terraform**-managed infrastructure.
- Designed multi-tenant authentication and **RBAC** (JWT, phone OTP over WhatsApp, magic-link email) with subscription- and role-based guards enforced across every API layer.
- Built an **AI assistant** pairing a RAG knowledge base with a confirm-before-write action agent — per-user rate limiting, output-token caps, and voice/TTS interaction.
- Implemented a double-entry accounting engine with immutable journal entries and automated monthly billing, plus event-driven pipelines (EventBridge, Lambda, SQS) for async PDF report generation to S3.
- Integrated **Paymob** subscription billing with webhook-verified payments; set up CI/CD via GitHub Actions (OIDC deploys) and drove **1,200+ automated tests** behind SonarQube quality gates.

Shipped: **Ittihad** (building/union management SaaS) · **Nuqta** (live small-group tutoring) · **Fleet Management** (vehicles, drivers, trips, invoicing) · [saysoft.tech](https://saysoft.tech) (company site)

Backend & Cloud Engineer, part-time · Tameni

Jun 2025 – Present

- Designed backend services in **Python** and **Django REST Framework** for a Flutter mobile health app — Firebase auth, role-based access control, and FCM push notifications.
- Built a **5-stage AI matching pipeline** (exact, alias, and fuzzy matching plus **Gemini LLM** inference) that auto-matches OCR-extracted lab results against a reference test catalog, fronted by a confidence-scored admin review queue.
- Iterated an **OCR** pipeline (Tesseract → EasyOCR → PaddleOCR) to extract structured lab data from medical report images, validated against a benchmark image suite.
- Implemented field-level encryption with hashed lookups and a two-step GDPR-compliant deletion flow protecting PII (national ID, phone, email); added async audit-logging middleware across all endpoints.
- Deployed and maintain production services on **Google Cloud** (Docker, VM instances, Nginx reverse proxy); authored operational runbooks and grew the test suite to **265+ cases across 13 modules**.

Shipped: **Tameni** — backend and GCP deployment for the Flutter Android app.

Software Engineer · Oasis for Advanced Technology Systems

Mar 2025 – Dec 2025

- Built and maintained **Django REST Framework** backends across medical education, real estate, clinics, and gyms, serving several client projects in parallel.
- Contributed to a Udemy-style medical education platform — course content management, live sessions via Zoom, secure video streaming with VideoCipher, and Paymob subscription payments.
- Rapidly built proof-of-concept demos and client-facing UI/UX prototypes with AI-assisted coding, shortening the feedback loop on feature decisions.
- Containerized applications with **Docker**, managed Linux production servers, and worked closely with frontend teams on integration.

- Developed backend services with **NestJS** and **Prisma** ORM against PostgreSQL.
- Deployed Dockerized applications on AWS (ECS/Fargate) and automated CI/CD with Bitbucket Pipelines.
- Took part in Scrum ceremonies and code reviews.

- Implemented Python/Django backend components and refactored legacy modules for maintainability.
- Worked with product and ML teams on scalable feature design and system reliability.

- Developed computer vision and AI-driven systems with **Python**, **OpenCV**, and **C#**.
- Led facial recognition and object-tracking modules, improving accuracy and robustness.
- Delivered secure on-premise production solutions with cross-functional engineering teams.

SELECTED PERSONAL PROJECTS

Django · Django REST Framework · PostgreSQL · Redis · Next.js · Docker

A question bank where every question is a learning unit, not a pass/fail item. **Six Django apps** — taxonomy, questions, quizzes, learning, gamification, users — behind a DRF API. Custom **AbstractUser on a UUID primary key** with email login, a self-referential category tree so any subject nests arbitrarily deep, questions tagged by Bloom's level and difficulty, a real **SM-2 spaced-repetition** implementation (ease factor, interval, repetitions, mastery), and server-side gamification computing XP, levels, streaks and accuracy from attempts rather than trusting the client. Four game modes ride on one thin view layer.

Next.js · TypeScript · Supabase · PostgreSQL · Gemini API · MDX

Built and shipped solo: **426 lessons across 23 domains**, 1,546 quiz questions, and 1,447 spaced-repetition flashcards, with real accounts and progress synced across devices. Integrated a Gemini-backed AI tutor that defines any selected phrase or re-explains any paragraph in English or Arabic. Cut the client bundle substantially by splitting the content corpus so a page fetches only the slice it renders instead of the whole catalog.

Next.js · TypeScript · Supabase · Gemini API · full RTL

Storefront and admin for a handmade-crafts business in Cairo. Fully right-to-left and Arabic-first rather than a translated English site. Kept the cart but replaced checkout with a pre-filled WhatsApp order message — matching how the customers actually buy, and removing payment-gateway integration and PCI scope from the build entirely.

Next.js · TypeScript · Dexie/IndexedDB · Service Worker

Eleven tracked areas — accounts, budgets, bills, loans, savings, investments and more — running entirely on-device with no backend. Cross-device sync is opt-in via short pairing codes rather than accounts, so no server ever holds anyone's financial data.

EDUCATION

Coursework: AI, Data Mining, Data Structures, Algorithms, Compilers, Databases, Web Development

CERTIFICATES

- AWS Cloud Practitioner Essentials — Coursera
  - Agile Project Management — HP-Life
  - AI Career Essentials — ALX
- Programming in Python — Meta
  - Version Control — Meta
  - Web Application and Django — Coursera
- Advanced Data Analyst Nanodegree — FWD/Udacity
  - Software Engineer Intern — HackerRank

ACHIEVEMENTS & LANGUAGES

2nd Place — NeuronetiX Hackathon    **LeetCode:** Mohamed-Salem-Ali    **HackerRank:** mohamedsalemal3

Languages: Arabic (native), English (full professional)