

OMAR ELKSASS

Mid-Level Backend Engineer · NestJS · Microservices · TypeScript

qsasomar@gmail.com | +20 103 306 9068 | Egypt | linkedin.com/in/Omar-Elksass | github.com/Elksass315

PROFESSIONAL SUMMARY

Backend Engineer with 2+ years of experience building production-grade distributed systems, ERP platforms, and real-time applications. Shipped a full-scale 10-module microservices ERP from the ground up and a multi-tenant platform serving 40,000+ active users. Deep expertise in NestJS, TypeScript, and PostgreSQL with strong command of event-driven architecture (EDA), Domain-Driven Design, and clean code principles. Comfortable across the full backend lifecycle — from system design and API development to containerised deployment on AWS and DigitalOcean.

PROFESSIONAL EXPERIENCE

Backend Engineer · somion.org

Dec 2025 – Present

Architected and engineered a full-scale ERP platform as a distributed microservices system from scratch using NestJS and PostgreSQL, spanning 10+ interconnected service domains:

- **HR Module** — Employee management, onboarding workflows, leave tracking, roles & org hierarchy.
 - **Accounting Module** — Invoicing, expense tracking, financial reporting, and transaction ledgers.
 - **Task Manager** — Project and task lifecycle with assignment, deadlines, and priority queues.
 - **Sales & CRM** — Lead pipeline, client records, deal tracking, and sales analytics.
 - **Real-Time Chat** — WebSocket-based team messaging with persistence, read receipts, and thread support.
 - **File System (Drive)** — Cloud file storage, folder hierarchy, sharing permissions, and upload/download APIs.
 - **Mail Service** — Transactional and bulk email with template management, scheduling, and open/click tracking.
- Designed the microservice communication layer using an **Event-Driven Architecture (EDA)**, enabling loosely coupled, independently deployable services.
 - Enforced **SOLID principles** and **Domain-Driven Design (DDD)** patterns across all service boundaries for long-term maintainability.
 - Built shared infrastructure libraries (auth guards, interceptors, DTOs, event contracts) reused consistently across all services.
 - Implemented **JWT + Passport** authentication with fine-grained RBAC and cross-service identity propagation.
 - Used **TypeORM + PostgreSQL** for relational modelling; Redis for distributed caching and session management.
 - Designed background job pipelines with **BullMQ** for notifications, report generation, and async processing.

Backend Developer (Part-Time) · [Estqrar](https://estqrar.com)

Mar 2025 – Dec 2025

- Architected NestJS modules for users, real-time chat, and payments following clean layered patterns.
- Built a **Socket.IO** real-time chat system with message persistence, indexing, and delivery guarantees; platform serves **40,000+ active users**.
- Integrated **Stripe** and local payment gateways (Neoleap, Paylink) with full webhook handling and idempotency.
- Implemented fine-grained **RBAC** using custom NestJS guards and decorators; migrated the platform from Express.js to NestJS for improved scalability.
- Wrote **Jest integration tests** covering auth flows, payment webhooks, and chat message delivery.

Backend Developer · [AIOT Group](https://aiotgroup.com)

Oct 2024 – Dec 2025

- Designed modular NestJS service architectures with controllers, providers, guards, and interceptors — reducing coupling by standardising cross-cutting concerns.
- Built and maintained scalable **REST and WebSocket APIs** across multiple client-facing products.
- Managed schema evolution with **TypeORM and Prisma** across PostgreSQL and MongoDB databases.
- Deployed production services on **AWS EC2** using Docker and Nginx reverse proxy with load balancing and SSL termination.
- Integrated **Redis caching** and BullMQ job queues to offload heavy processing and reduce API response latency.

- Participated in weekly code reviews and PR discussions, enforcing team coding standards across 3 concurrent product lines.

Backend Developer · Travel Sync

Aug 2024 – Mar 2025

- Developed RESTful APIs for bookings, payments, and third-party travel service integrations (airlines, hotels).
- Applied **dependency injection and DTO validation** (class-validator) to enforce strict input contracts across all endpoints.
- Achieved **30% improvement in API response time** through PostgreSQL query optimisation, indexing strategy, and N+1 elimination.
- Wrote unit and integration tests with **Jest + Supertest** covering critical booking and payment flows.

NOTABLE PROJECTS

somion ERP Platform — NestJS · PostgreSQL · TypeORM · Redis · BullMQ · Docker · Socket.IO

- Full-scale, 10-module distributed ERP (HR, Accounting, CRM, Marketing, Task Manager, Chat, Teams, CMS, Drive, Unified Auth) built on EDA microservice architecture from scratch as sole backend architect.
- Designed all inter-service event contracts, shared library packages, and infrastructure-as-code deployment pipelines.

Estqrar App — NestJS · Socket.IO · Stripe · PostgreSQL · Redis

- Multi-tenant backend powering 40,000+ active users with real-time messaging, RBAC, and multi-gateway payment processing (Stripe, Neoleap, Paylink).
- Migrated the platform from Express.js to NestJS, improving modularity and test coverage across auth and payment flows.

The Poultry Platform — NestJS · Django · PostgreSQL · AI/ML · WebSocket

- Full-stack backend serving 10,000+ users with an AI-powered disease detection system, chatbot engine, and B2B marketplace.
- Integrated ML inference endpoints into the NestJS gateway layer with async job queuing for non-blocking prediction pipelines.

TECHNICAL SKILLS

Languages & Frameworks: NestJS, Node.js, TypeScript, Express.js, JavaScript (ES6+)

Architecture & Design: Microservices, Event-Driven Architecture (EDA), Domain-Driven Design (DDD), SOLID Principles, Clean Architecture, OOP, Dependency Injection, MVC, Modular Monolith

Databases & Storage: PostgreSQL, MongoDB, TypeORM, Prisma, Redis, AWS S3

Real-Time & Messaging: Socket.IO (WebSocket), BullMQ, Event Emitters

Auth & Security: JWT, Passport.js, OAuth2, RBAC, Guards & Interceptors, API Rate Limiting

DevOps & Cloud: Docker, Nginx, AWS EC2, AWS S3, DigitalOcean, Vercel, PM2, Jenkins, CI/CD Pipelines, Git

Integrations: Stripe, Neoleap, Paylink, Swagger / OpenAPI, Postman, REST, GraphQL, ourSMS

Testing & Quality: Jest (Unit & Integration), Supertest, Code Review, API Documentation

EDUCATION

B.Sc. in Artificial Intelligence · Kafr El Sheikh University

2020 – 2024

GPA: 3.69 / 4.0 — Graduated with Distinction

ALX Software Engineering Program · Full-Stack Development Track

2023 – 2024

Intensive 12-month program covering system design, distributed systems, and production-grade software engineering.

LANGUAGES

Arabic: Native | **English:** Professional Working Proficiency (B2)