

Islam Khalil

Full Stack Software Engineer | Backend Specialist

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PROFESSIONAL EXPERIENCE

Full Stack Software Engineer

Generation C | April 2024 – Present | Cairo, Egypt

Stack: NestJS · Angular · PostgreSQL · MongoDB · Redis · Kafka · Elasticsearch · Docker · gRPC · Kong

- Played a central engineering role migrating **Shift** from a monolith to a distributed microservices architecture, reducing average request latency from 500ms to 200ms.
- Migrated authentication from stateful session-table storage to stateless JWT-based auth with refresh token rotation, centralizing auth enforcement at the Kong API gateway and eliminating session-store coupling across services.
- Replaced a 1-hour TTL user cache with a Kafka event-driven sync, eliminating latency spikes from cold cache misses — standardizing all user request latency under 200ms while keeping data real-time consistent across services.
- Built a multi-channel Notification Service (push, SMS, email) with Firebase audience segmentation, enabling operations teams to broadcast to targeted clusters by user type, language, and region — delivering thousands of notifications daily.
- Engineered a full observability stack across all services — routing structured exception logs through Kafka into Elasticsearch for Kibana-based analysis, and configuring Elastic APM for distributed tracing and service-level metrics, enabling real-time visibility into system health and performance.
- Designed a geospatial surcharge engine with dynamic zone management and 2 configurable pricing models, enabling business teams to manage pricing independently without engineering involvement.

Full Stack Software Engineer

Data Gear | July 2021 – April 2024 | Cairo, Egypt

Stack: ASP.NET Core · ASP.NET MVC · Angular · Microsoft SQL Server · Oracle DB · PL/SQL · Docker

- Helped scale **DG A.R.T** to 15+ banking and enterprise clients, delivering a production-grade BI platform with automated CSV/PDF reporting pipelines, configurable scheduling, and large-scale data export processing millions of rows.
- Engineered an automation script that cut client onboarding time by 200%, directly improving team capacity and delivery speed.
- Built a data export pipeline processing millions of rows into CSV/PDF using chunking and async strategies; added user-defined cron scheduling to fully automate client data workflows.

FREELANCE EXPERIENCE

Freelance Software Engineer

LS Fitness | December 2025 – February 2026 | Remote

Stack: Express.js · MongoDB · React.js

- Sole architect and engineer of the LS Fitness platform, designing and delivering a unified backend serving both the mobile app and web dashboard, establishing all service boundaries, data models, and API contracts.
- Engineered a meal composition engine that dynamically calculates exact nutritional breakdowns (macros, vitamins, minerals) by assembling user-defined components, enabling scientifically accurate meal plans at scale.
- Designed a multi-role authentication system with role-based access control for trainers, external trainers, admins, and end users with isolated permission scopes per actor.

- Integrated SkipCash payment gateway and architected a flexible subscription tiering system with plan lifecycle management, upgrades, and expiry.
- Built a configurable coupon engine supporting multi-dimensional targeting rules including user eligibility, date ranges, course-level applicability, global usage limits, and single-use enforcement.

EDUCATION

Bachelor of Science in Computer Science and Pure Mathematics

Al-Azhar University | September 2017 – May 2022 | Cairo, Egypt

SKILLS

Languages & Frameworks: TypeScript, JavaScript, C#, Python, SQL, NestJS, ASP.NET MVC, ASP.NET Web API, Angular, React.js

Databases & Messaging: PostgreSQL, Microsoft SQL Server, MySQL, Oracle, MongoDB, Redis, Kafka, BullMQ, Elasticsearch

Architecture & Design: Microservices, Domain-Driven Design (DDD), Clean Architecture, SOLID, OOP, Design Patterns

APIs & Communication: REST, GraphQL, gRPC, WebSockets

DevOps & Cloud: Docker, CI/CD Pipelines, Git, AWS (EC2, S3, VPC, Lambda, API Gateway, DynamoDB, Route 53), Kong, Elastic APM, Kibana

Security & Quality: OAuth2, JWT, Identity Framework, Dependency Injection, Unit Testing

CONTINUOUS LEARNING

Fundamentals of Database Engineering

Hussein Nasser — Udemy

ACID, Indexing, Partitioning, Sharding, Replication, Concurrency Control, and Database Engines.

Fundamentals of Operating Systems

Hussein Nasser — Udemy

CPU architecture, virtual memory, process scheduling, socket programming, and file systems.

Software Architecture Essentials: Masterclass

Udemy

N-Layer, Onion, Hexagonal, Clean Architecture, and Modular Monolith with event-driven communication.

AWS DevOps — Cloud Infrastructure & CI/CD Pipelines

Ahmed Metwally — Cloud Native Base Camp

IAM, EC2, S3, VPC, Lambda, API Gateway, DynamoDB, Auto Scaling, Route 53, and multi-environment CI/CD pipelines.

LANGUAGES

Arabic: Native Proficiency | English: Professional Working Proficiency