

Mahmoud Ammar

Software Engineer

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EDUCATION

Bachelor of Science in Computer Science.

2019 – 2023

MSA UNIVERSITY

Dual Degree Program: UK

Graduation Project: **Enhancing Accessibility in Audiobooks through Voice Cloning**

(Greenwich) and Egypt

Technology:

Campus.

Grade: A

- Utilized PyTorch to implement a machine learning solution aimed at enhancing accessibility for audiobook narrators through voice cloning technology.
- Achieved a distinguished Mean Opinion Score (MOS) of 4.2 out of 5, offering significant time savings of up to 70% for content creation endeavors.
- [Published] : Academic paper under IEEE provision at the ICCI24 conference.

SKILLS

SQL | Sequelize | Postgresql | TypeORM | NoSQL | Mongoose | Database Diagrams |
Class Diagrams | JavaScript | TypeScript | OOP | Node.js | Express | Nest.js | RESTful APIs |
GraphQL | CI/CD | Redis | Jest | Docker | S3 | Socket.io | GitHub | Python | PyTorch | Socket

PROFESSIONAL EXPERIENCE

Backend Software Engineer

Jan 2025 – Present

APES Solutions

- **Implemented advanced architectural patterns** including Domain-Driven Design (DDD), Repository pattern, and Clean Architecture principles across 3 major projects, resulting in maintainable, clean and testable codebases.
- **Collaborated with cross-functional teams** including frontend developers, DevOps engineers, and product managers to deliver end-to-end solutions, participating in code reviews and maintaining high code quality standards.
- **Developed and maintained scalable backend systems** for multiple production applications including race management platforms, nutrition systems, and booking platforms, ensuring high performance and reliability across diverse business domains.

Backend Developer

Jul 2024 – Jun 2025

XpertCoder Software Solutions

- **Proposed technical solutions** for complex business challenges.
- **Collaborated with product teams** to translate business requirements into technical specifications, delivering custom solutions that exceeded client expectations and project deadlines.
- **Developed custom reporting and analytics** modules that provided clients with insights helping their marketing team.

Backend Developer

Jan 2024 – Dec 2024

Tecno Blocks

- **Developed and maintained robust backend infrastructures** for diverse web applications, implementing secure and scalable solutions that supported business growth and user expansion.
- **Collaborated with stakeholders** to analyze business requirements and deliver tailored technical solutions that aligned with client objectives and project timelines.
- **Coordinated with cross-functional teams** including frontend developers and project managers to ensure seamless integration and successful project delivery.

Backend Developer

Nov 2023 – Mar 2024

ROUTE

Internship

- **Applied theoretical knowledge to practical development** by contributing to innovative software solutions
- **Collaborated with senior developers** to understand enterprise-level development workflows and collaborative development methodologies.

IT Intern

Sep 2022 – Oct 2022

E-finance

Internship

- **Completed intensive fintech training** at E-Finance, a leading financial technology company, gaining comprehensive insights into IT operations and cloud infrastructure management.
- **Applied theoretical knowledge to practical development** by contributing to innovative software solutions that enhanced user experience and streamlined business operations.

PROJECTS

Cairo Runners - Race Management Platform [Production]

A comprehensive race and event management system designed for organizing running events, marathons, and athletic competitions

- **Race Management:** Complete race lifecycle management including event creation, scheduling, location tracking with GPS coordinates, and bus stop coordination for participant transportation.
- **Registration System:** Advanced participant registration with race number assignment, t-shirt sizing, emergency contact management, and running club affiliations.
- **Ticket Management:** Flexible ticketing system with capacity control, numbering systems, and multiple ticket types to accommodate different participant categories.

Tech Stack: NestJS, TypeScript, PostgreSQL, TypeORM, Redis, JWT, Swagger, Firebase Admin, Nodemailer, AWS Services, Docker

Spark Booking System - Multi-Service Entertaining Platform [Production]

A sophisticated multi-tenancy platform supports managing your spaces and ease the reserving flow

- **API Versioning:** Implemented backward-compatible API versioning system allowing seamless feature updates while maintaining client compatibility.
- **Dynamic Pricing:** space-specific pricing, and ticket-based pricing for experiences.
- **Multi-tenant Architecture:** Comprehensive tenant management supporting multiple business types(SaaS).
- **Advanced Features:** Real-time slot availability, comprehensive audit logging, and integrated payment processing.

Tech Stack: NestJS, TypeScript, PostgreSQL, TypeORM, Redis, JWT, Swagger, Bull Queue, AWS Services, Docker, Sentry, Google Maps API

DFN - Nutrition & Meal Planning Platform [Production]

An intelligent nutrition and meal planning system that generates personalized dietary plans using advanced algorithms and nutritional science for one of the finest coaches in the middle east.

- **AI-Powered Meal Engine:** Sophisticated meal generation algorithms using constraint-based optimization to create nutritionally balanced meal plans based on user goals (normal, shredding, etc.).
- **Nutritional Calculations:** Advanced BMR, TDEE, and macro-nutrient calculators with support for custom dietary restrictions and ingredient exclusions.
- **Meal Plan Management:** Comprehensive meal planning with breakfast, lunch, dinner, and snack distribution, featuring ingredient alternatives and recipe integration.
- **Subscription Management:** User subscription packages based on users' country with meal plan limits, nutritional tracking, and progress monitoring.
- **Ingredient Database:** Extensive ingredient library with nutritional information, allergen tracking, and alternative ingredient suggestions.

Tech Stack: NestJS, TypeScript, PostgreSQL, TypeORM, Redis, JWT, Swagger, Bull Queue, AWS Services, Docker, ExcelJS

Easy-Book - Salon Booking Platform [Production]

A comprehensive salon booking platform developed specifically for a client in Saudi Arabia. The platform simplifies the process of managing salon services, appointments, and staff scheduling across multiple branches.

- **Appointment Scheduling:** Streamlined booking system for clients to reserve services across different branches.
- **Branch and Service Management:** Administrators can create and update branches, services, and working hours, ensuring a flexible and customizable experience.
- **Audit Logging:** Tracks all major actions (such as payments, reservations, updates) with detailed logs, ensuring full transparency for the business.
- **Review System:** Allows customers to leave reviews for service providers
- **Localization:** Full support for Arabic and English interfaces to meet local market needs.
- **Financial Reports:** Generate detailed financial reports, including revenue, service sales, and payment tracking.

Tech Stack: NestJS, PostgreSQL, TypeORM, Cloudinary, Swagger, JWT, TypeScript, Localization, Firebase Cloud Messaging, Redis, Nodemailer, Passport.js

Plan-B - Medical Online Course Platform [Production]

An online platform delivering medical education through a diverse catalog of courses and specialized training programs in collaboration with local hospitals

- **Authentication and Role-Based Access:** Implemented secure authentication mechanisms and role-based access control to protect sensitive data.
- **Video Uploading:** Streamlined the process for uploading instructional videos, enhancing content delivery and providing a seamless user experience.
- **Rating System:** Integrated a rating and review system for courses and instructors, allowing users to provide feedback and evaluate educational quality.
- **Payment Integration:** Integrated with the **Fawry** payment system for secure and efficient transaction processing.

Tech Stack: NestJS, TypeScript, MongoDB, Mongoose, Passport.js, Fawry, Cloudinary, S3, Nodemailer, Swagger

Anubis - Martial Arts Academy Management Platform [Production]

A comprehensive subscription and package management system designed for organizing fitness packages, coaching services, and subscription-based business operations

- **Membership & Subscription System:** Advanced student membership management with flexible subscription plans, payment processing through Paymob integration, membership renewals, class package purchases.
- **Recurring Sessions:** Efficiently schedule repeating sessions (daily, weekly, monthly)
- **QR Code Integration:** Automatically generate unique QR codes for each session, enabling members to check in via mobile app with validation against package restrictions.

- **Admin Dashboard:** React-based administrative interface with comprehensive management tools for packages, subscriptions, users, coaches, products, transactions, and system configuration with real-time analytics and reporting.
 - **Mobile API:** Dedicated mobile API endpoints for user authentication, package browsing, subscription management, payment processing, QR code check-ins, and push notifications with Firebase integration.
- Tech Stack:** NestJS, TypeScript, PostgreSQL, TypeORM, Redis, JWT, Swagger, Firebase Admin, Nodemailer, AWS Services, Docker, React, Material-UI, TanStack Query, React Hook Form, Vite, Nx Monorepo

Slash - Refined Local E-Commerce Platform

E-commerce Platform for Local Brands and Influencers Marketing.

- **Database Architecture Optimization:** Redesigned and refactored over 20% of the database schema to enhance query performance and accommodate new feature requirements, resulting in 50% faster data retrieval and improved system scalability.
- **Intelligent Matchmaking System:** Developed and implemented an advanced algorithm-based matchmaking process that pairs brands with optimal influencers using comprehensive metrics based on engagement rates.
- **Social Media Integration:** Seamlessly integrated TikTok APIs to enable influencers and brands to showcase their authentic identity, content style, and audience engagement metrics.