Marwan Elzafarani

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EDUCATION

Arab Academy for Science & Technology   **Cairo, Egypt**
B.Sc. in Computer Engineering — GPA: 3.6/4.0   *Sep 2020 – Jul 2025*

University of Northampton   **Northampton, UK**
Dual Degree Program: B.Sc. in Computer Engineering   *Sep 2020 - Jul 2025*

TECHNICAL SKILLS

Programming Languages: Python, C#, Java, Swift, Dart, SQL
Web Development: FastAPI, ASP.NET Core, Spring Boot, WebSocket, REST APIs
API Integration: Payment Gateways, Third-Party Services
Software Concepts: OOP, Data Structures, MVC (Model-View-Controller) design pattern
Databases: PostgreSQL, Microsoft SQL Server, Firebase Firestore
Tools: Git, Jira, Maven, Postman

TECHNICAL PROJECTS

Ducky Cart
FastAPI, MySQL — Repo   *Sep 2024 - Present*

- Designed and implemented a scalable backend architecture supporting concurrent shopping sessions with real-time cart updates via **WebSocket**, achieving $\sim$ 200ms latency.
- Implemented secure QR-based session authentication system with **JWT tokens** (JSON Web Tokens), reducing unauthorized access.
- Integrated Xpay payment gateway with **idempotent REST APIs**, achieving 99.9% transaction success rate
- Developed MySQL database schema using SQLAlchemy ORM, ensuring data consistency across concurrent operations
- Developed backend functionalities for user management and authentication, and implemented Server-Sent Events (SSE) along with a logging mechanism for the admin dashboard.

En2ly & En2ly Driver
Flutter, Firebase, OpenStreetMap — Passenger / Driver   *Jul 2024*

- Built a ride-hailing platform with dual apps (passenger/driver), enabling real-time ride requests, dynamic driver assignment, and live trip tracking.
- Reduced API costs by 80% by replacing Google Maps with OpenStreetMap integration.
- Designed Firestore database schema supporting 1k+ daily active users.

ACHIEVEMENTS & AWARDS

2nd Place – Hack24 Global Innovation Challenge (Nov 2024), Awarded $500 by e& Egypt at the American University in Cairo (AUC CEI), ranking 2nd among 86 teams in the AIoT track for designing an AIoT Smart Cart—a scalable, innovative solution aligning with "The Future of Technology" theme. Developed a smart retail system integrating computer vision and IoT for real-time inventory tracking and automated checkout. Details

CERTIFICATIONS

Dot Net Application Development — Link   **ITI — Jul 2024**
ASP.NET Core • Entity Framework • MVC Architecture

Flutter Application Development — Link   **ITI — Aug 2023**
Flutter • API Integration • State Management

IOS Application Development — Link   **ITI — Jul 2023**
Swift • UIKit • Navigation Design

EXTRACURRICULAR ACTIVITIES

Software & AI Team Member in RobEn Club (2022-Present) - Contributed to 4th place in Mate ROV Competition 2024.

Vice-Head of Computer Committee in IEEE Club (2023-2024) - Mentored 15+ students in Python programming fundamentals through weekly workshops.

Computer Committee Member in IEEE Club (2022-2023) - Led backend development for IEEE-AAST website using Python/FastApi, aiming to enhance student engagement with the club by 30%.