

Mahmoud Hesham Elkholy

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PROFESSIONAL SUMMARY

AI software engineer building AI applications and backend systems, from architecture to deployment. Led an 11-person engineering team at HUNA and built a clinical AI assistant with physician review, alongside multilingual retrieval systems. Previously evaluated AI-generated code at Outlier AI, analyzed telecom data at Orange Egypt, and taught data science and BI to 50+ students.

EXPERIENCE

HUNA

Damietta, Egypt

AI Software Engineer

May 2026 – October 2026

- Coordinated an 11-person team across backend, frontend and DevOps, assigning tasks based on technical ability and availability.
- Helped reduce project delivery time by approximately 60% against the original estimate by breaking work into smaller tasks and assigning them based on ability and availability.
- Owned technical architecture and reviewed 60+ pull requests for implementation quality and consistency; led technical training for interns.

Outlier AI

Remote

AI Code Reviewer / Data Analyst

Jun 2024 – Oct 2024

- Reviewed AI-generated Python code across machine learning and NLP tasks, catching logic errors and reasoning failures that automated metrics missed.
- Applied A/B testing and evaluation-metric methodology to judge output quality.

Orange Egypt

Damietta, Egypt

Data Analyst, Telecom

Jul 2023 – Jan 2024

- Cleaned and restructured telecom operational datasets in Excel and SQL over a 7-month placement, supporting recurring reporting workflows.
- Wrote SQL queries for operational and performance analysis.

LEADERSHIP & ACTIVITIES

MLSC, Horus University of Egypt

Damietta, Egypt

Technical Head

Aug 2026 – Present

- Manage the club's GitHub org across 4 tracks (Data Science, AI, Cybersecurity, Embedded Systems) for 200+ members.
- Ensure every track head's sessions ship with real exercises and practical projects, not passive lecture-style sessions.

Data Science Lead

Sep 2025 – Aug 2026

- Built the club's BI curriculum from scratch and taught it to 50+ students, covering Python, multi-table SQL, regression, clustering, and Power BI, built around real business scenarios, not toy datasets.

Microsoft

Damietta, Egypt

Microsoft Student Ambassador

Jul 2026 – Present

- First Microsoft Student Ambassador at Horus University and Associate Microsoft Ambassador #21 in Egypt; reached 400+ students across 6 campus sessions.

EDUCATION

Horus University of Egypt

Damietta, Egypt

B.Sc. Data Science, Faculty of AI and Informatics

2024 – 2028 (expected)

PROJECTS

MyDoc90: clinic management platform: TypeScript, Express, React, PostgreSQL

- Built a multi-tenant clinic platform with appointment queues, patient timelines and treatment-plan payment tracking; implemented backend workflows and deployment, with physician review for AI-assisted prescription output.

Bulk USSD & Bulk Classifier: Flutter, Kotlin, SQLite (client project pair)

- Built companion telecom apps for bulk USSD campaigns and on-device call-outcome classification, with native background services, pause/resume, persistent run history and Excel exports; shared a licensing foundation.

DeepFalcon (ML task work): jet-image classification: Python, PyTorch, PyTorch Geometric

- Built a convolutional VAE for 125×125 jet images and a 3-layer GCN over k-NN graphs; recorded 70.9% test accuracy and 0.77 AUC on the held-out split of a 50,000-jet experiment.

ICPC HUE: Judge0 deployment contribution: Azure, Docker Compose, Nginx, Next.js

- Self-hosted Judge0 on an Azure VM and restored the platform's Run Tests integration, with TLS, a private backend port, memory limits and documented deployment scripts.

Arabic NLP Toolkit API: Python, FastAPI, pytest, Docker

- Implemented normalization, reversible Buckwalter transliteration and Arabic number/currency wording behind validated APIs; seven core tests cover text processing and number grammar.

SKILLS & CERTIFICATIONS

Technical: Python, TypeScript, C++, PyTorch, PyTorch Geometric, TensorFlow, scikit-learn, pandas, NumPy, NLP (Hugging Face Transformers, NLTK), deep learning, time-series analysis, clustering, feature engineering, A/B testing, statistical modeling

Data & BI: SQL, Power BI, Excel, Jupyter, Matplotlib, Seaborn, InfluxDB, Grafana, data visualization

Backend & Infra: FastAPI, SQLAlchemy, React, Docker, REST APIs, JWT/bcrypt auth, Git, Linux, Flutter/Dart, Figma

AI Agents / Cloud / IoT: Anthropic API, Google Gemini API, agentic RAG, Microsoft Azure, MLOps, Huawei Cloud ML services, MQTT, HiveMQ, Arduino, BLE, NB-IoT, LoRa

Certifications: Huawei Cloud HCCDA-AI & Tech Essentials, FreeCodeCamp Data Analysis with Python, IBM SkillsBuild AI Fundamentals, HackerRank SWE Intern.