

Marwan Mohammed

AI/ML Engineer

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[Personal Portfolio](#)

About

An undergrad Intelligent Systems Engineer building expertise in Data Science, MLOps, and AIoT. I thrive on solving complex problems, conducting thorough research, and bringing ideas to life. Whether it's building intelligent systems or optimizing workflows, I always do my best to deliver the best maintainable and scalable solutions.

Education

Bachelor of Computer Science

October 2022 - July 2026

Menofia University, Faculty of Artificial Intelligence, Department of Intelligent Systems

Grade(GPA): 3.48/4

Languages

Arabic(Native) - English (C2 Proficient)

Technical Skills

MLOps: Django, Docker, Kubernetes, CI/CD Pipelines, Model Deployment (Basic)

Machine Learning and Data Science: Scikit-Learn, PyTorch, Pandas, Data Processing, interpretation of results, Data Manipulation

Cloud Infrastructure AWS (Basic), Terraform

Data Analysis: Data Wrangling and Visualization, Exploratory Data Analysis, data-driven insights, data collection

Programming: Python, C/C++, Object Oriented Programming (OOP), Linux, Software Development Process

Mathematics: Linear Algebra, Calculus, Statistics and Probability

Soft Skills

Adaptability - Commitment - Communication Skills - Collaboration - Experimentation - Presentation Skills - Project Development - Public Speaking - Problem Solving - Quick Learning - Research and Development - Teamwork

Work Experience

Student Guide

February 2025 - Present

CLS - On-Site - Cairo - Part Time

Helping students navigate their newly learned skills in the DECI program, creating supportive environments for skill development and growth.

DevOps Engineer

January 2025 - Present

Prezza - Remote - Contractor

Joined mid-development to help scale infrastructure, troubleshooting issues while keeping teams aligned. Cross-functional work including Django development to meet project deadlines.

Student Guide

July 2023 - February 2025

YAT Learning Center - On-Site - Cairo - Part Time

Helped students navigate their newly learned skills in the DECI program, creating supportive environments for skill development and growth.

Software Engineer & Data Analyst

August 2024 - November 2024

Al-Adel Charitable Association - On-Site - Cairo - Contract

Led full lifecycle development of custom management system and built data dashboards for informed decision-making. Focused on iterative improvements for performance and usability.

DevOps Intern

August 2024 - September 2024

Banque Misr - Hybrid - Cairo - Internship

Selected for the Al-Rowad internship program. Gained exposure to enterprise DevOps practices, inspiring my current pursuit of an MLOps career path.

Volunteer Experience

Vice-President

October 2023 - October 2024

AI Entrepreneurship Club - Hybrid - Menofia University

Rebuilt organizational structure, supervised 7 communities and 5 committees. Led strategic oversight and hands-on execution of events and programs.

Head of Human Resources Committee

February 2023 - September 2024

AI Entrepreneurship Club - Hybrid - Menofia University

Led all HR operations while wearing multiple hats - from performance tracking to creating report templates and boosting team morale. Frequently stepped beyond my core role to contribute graphic design, video editing, scripting, and copywriting when needed.

Projects

Neural Network Techniques Explorer | *Academic Project*

Collaborated with my team to create an Interactive toolkit implementing 6 ANN methods (RBF, PCA, SOM, ART1, Fuzzy, Genetic) with Streamlit GUI for visualization and experimentation.

Highlights:

- 6 ANN architectures implemented from scratch
- Developed an intuitive web interface using Streamlit

Tech Stack: Python, Streamlit, Pandas, Matplotlib, Git

Link: github.com/MarwanMohammed2500/RBF-Calculator

Smart Door/Lock | *Academic Project*

A smart lock system with real-time face recognition, backup password access, and IoT connectivity using ESP32. The system sends intrusion alerts via Telegram and can integrate with broader home security networks. Ideal for residential or high-security environments as a first layer of defense against unauthorized access.

Highlights:

- Implemented a face recognition model using OpenCV
- Used an ESP32 hooked up with an LCD Display and an external Numpad.
- Added the ability to manually override the lock
- Sends intrusion alerts via Telegram.

Tech Stack: Python, Embedded Systems, Computer Vision, Arduino, ESP32, IoT

Egyptian ID OCR model | *Academic Project*

Collaborated with my team to create a specialized OCR pipeline for extracting structured data from Egyptian national ID cards, combining fine-tuned pretrained models with custom-trained components. Ideal for governmental and private institutions seeking to automate data entry, improve accuracy, and ensure data integrity when processing ID-based information.

Highlights:

- Used a Pretrained model for embeddings and trained a new model to extract information from Egyptian National ID Cards properly

Tech Stack: Python, Computer Vision, AI model training, OCR

Link: github.com/NASO7Y/OCR_Egyptian_ID

Simulating Non-Linear Behavior in Logistic Regression | *Personal Learning Project*

Explored feature engineering techniques to improve logistic regression performance by 6% (F1-score) and 4% (accuracy) through log-odds binning and one-hot encoding transformations.

Highlights:

- Simulated a decision tree behavior within a logistic regression model
- Gained practical insights into feature interactions, transformation techniques, and model interpretability

- Conducted a detailed exploratory analysis to reveal non-obvious relationships between features and the target variable

Tech Stack: Python, SciKit-Learn, Feature Engineering, Pandas, Matplotlib, Seaborn

Blog Post Link: [Engineering Non-Linearity into Logistic Regression \(Like a Decision Tree!\)](#)

Kaggle Notebook Link: [Turning a Logistic Regression into a Decision-Tree](#)

ML Web App for Predicting Ad Campaign Responses | *Personal Project*

Deployed a modified logistic regression model in a web app to predict user response to ads based on age and salary. Helps optimize ad spend by enabling more targeted and cost-efficient marketing campaigns.

Highlights:

- Built a modern, responsive frontend to accept user input and display predictions
- Integrated backend logic (Django) for preprocessing, model inference, and serving responses
- Containerized the full application using Docker for easy deployment and reproducibility

Tech Stack: Python, Django, Docker, Git, Pandas

Link: github.com/MarwanMohammed2500/Ad-Campaign-Demographical-Prediction

Celebrity Face Recognition CV Model | *Personal Project*

A real-time video recognition system using InsightFace's antelopev2 and Deep SORT. While built with celebrities for demo purposes, the system demonstrates core technologies used in automated security systems, access control, and smart surveillance.

Highlights:

- Used a pretrained model for embedding generation
- Scraped images of famous personnel to use as a reference for the embeddings
- Mapped those embeddings to names
- Supports detection for unknown faces

Tech Stack: Computer Vision, Pretrained Models, Video Processing, Embedding Similarity

Link: github.com/MarwanMohammed2500/Celebrity_Face_Recognition