

Marwan Mohammed

MLOps Engineer

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About

An Intelligent Systems Engineer building expertise in MLOps and AIoT. I enjoy working with machine learning models, building intelligent systems, and taking projects from ideation to deployment, and then maintaining and scaling them long-term. Whether it's building intelligent systems or optimizing workflows, I strive to develop maintainable and scalable intelligent systems, grounded in research and real-world applicability.

Portfolio

Portfolio: marwan-mohammed-portfolio-442cb.web.app/

GitHub: github.com/MarwanMohammed2500

LinkedIn: linkedin.com/in/marwan-mohammed1/

Kaggle: kaggle.com/marwanmohammedsayed

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

Programming: Python, Object Oriented Programming (OOP), Linux, SQL

Machine Learning and Data Science: Scikit-Learn, PyTorch, Pandas, NumPy, AI model Design, Experimentation.

Data Analysis: Data Visualization and Data Wrangling, Exploratory Data Analysis (EDA)

MLOps: Docker, Terraform, FastAPI, CI/CD Pipelines(Jenkins, GitHub Actions)

Cloud Infrastructure: AWS Basics

Mathematics: Linear Algebra, Calculus, Statistics and Probability

Robotics & IoT: Arduino, ArdionoCloud, ESP32, IoT Communication, Embedded Systems, Proteus

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

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

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.
- Created 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 a custom management system.
- 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

- Gained exposure to enterprise DevOps practices.
- This experience inspired my current pursuit of an MLOps career.

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 outside my core responsibilities to contribute graphic design, video editing, scripting, and copywriting when needed.

Projects

End-to-End MLOps Pipeline: Deep Learning Deployment | Personal Project

- Modular ML Design for easy training and testing with configurable parameters.
- Used TensorBoard for experiment tracking.
- Applied industry best practices to deploy the model
- Used Docker for containerization and reproducible deployment, and Kubernetes for container orchestration

Tech Stack: PyTorch, FastAPI, Docker, Kubernetes, TensorBoard, TorchScript, Matplotlib, Git

Link: github.com/MarwanMohammed2500/End-to-End-MLOps-Pipeline-Deep-Learning-Deployment

MCQ Generator | Personal Project

- Built a scalable pipeline for automated MCQ generation from large documents.
- Implemented modular design with Streamlit UI for file upload, embeddings, and LLM-driven question generation.
- Integrated LangChain with Gemini embeddings-001 and Gemini 2.5-flash for vector storage and inference.
- Designed a lightweight quality control using similarity search to filter weak questions.

Tech Stack: LangChain, Streamlit, Google Gemini, LLMs, Vector Databases, Git

Link: github.com/MarwanMohammed2500/Scalable_Question_Generation_System

Neural Network Techniques Explorer | Academic Project

- 6 ANN architectures implemented from scratch (RBF, PCA, SOM, ART1, Fuzzy, GA)
- 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

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

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

Egyptian ID OCR model | Academic Project

- Used a pre-trained model for embedding generation.
- Trained a model to extract information from Egyptian National ID Cards properly

Tech Stack: Python, OpenCV, AI model training, OCR model

Link: github.com/NASO7Y/OCR_Egyptian_ID

Celebrity Face Recognition CV Model | Personal Project

- Built a face recognition pipeline using a pre-trained embedding model, with support for unknown detection and custom reference sets scraped from public sources.

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

Link: github.com/MarwanMohammed2500/Celebrity_Face_Recognition

ML Web App for Predicting Ad Campaign Responses | Personal Project

- Used Django for preprocessing, model inference, and serving responses logic.
- 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

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

- Simulated a decision tree behavior within a logistic regression model through log-odds binning and one-hot encoding transformations.
- 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.
- Improved model F1-score by 6% and accuracy by 4%

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

Blog Post Link: [Engineering Non-Linearity into Logistic Regression \(Like a Decision Tree!\)](https://engineeringnonlinearity.com/engineering-non-linearity-into-logistic-regression-like-a-decision-tree/)

Kaggle Notebook Link: [Turning a Logistic Regression into a Decision-Tree](https://www.kaggle.com/marwanmohammed2500/turning-a-logistic-regression-into-a-decision-tree)