

# Marwan Mohammed

## Data Scientist

---

Cairo, Egypt | May 2, 2004 | [marwanmohammed056@gmail.com](mailto:marwanmohammed056@gmail.com) | +201018839464 |  
[github.com/MarwanMohammed2500](https://github.com/MarwanMohammed2500) | [linkedin.com/in/marwan-mohammed1/](https://linkedin.com/in/marwan-mohammed1/) |  
[kaggle.com/marwanmohammedsayed](https://kaggle.com/marwanmohammedsayed) | [medium.com/@marwanmohammed1886](https://medium.com/@marwanmohammed1886)  
[Personal Portfolio](#)

---

### About

---

An undergrad Intelligent Systems Engineer building expertise in Data Science, MLOps, and AIoT (Artificial Intelligence of Things) by bridging my DevOps experience with machine learning, robotics, and IoT. I thrive on solving complex problems with innovative techniques and enjoy turning ideas into reality through cutting-edge projects and research. Whether it's building intelligent systems or optimizing workflows, I take a hands-on, results-driven approach to every challenge, while ensuring quality and maintainability long-term.

### Education

---

#### Bachelor of Computer Science

Oct 2022 -

Jul 2026

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

Grade(GPA): 3.48/4

### Languages

---

Arabic(Native Tongue) - English (C2 Proficient)

### Technical Skills

---

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

**Machine Learning and Data Science:** Scikit-Learn, TensorFlow, NumPy, Pandas, Matplotlib, Data Processing, Statistical Modeling

**Cloud Infrastructure** AWS (EC2, EKS, ECS, RDS), Terraform, Bash

**Data Analysis:** Data Wrangling and Visualization, Exploratory Data Analysis

**Programming:** Python, Scripting, Infrastructure-as-Code (IaC), C/C++

### Soft Skills

---

Adaptability - Commitment - Communication Skills - Conflict Handling - Presentation - Public Speaking - Problem Solving - Quick Learning - Research and Development - Teamwork and Leadership

## Work Experience

---

### Student Guide

Feb 2025 - Present

#### CLS - On-Site - Cairo - Part Time

I work as a student guide in the Egyptian Ministry of Communication's DECI, helping students navigate their desired paths. I earned their trust and appreciation by creating a healthy environment where students can openly express their weaknesses and identify their strengths. All while developing valuable technical expertise and enhancing a new set of skills of my own.

### DevOps Engineer

Jan 2025 - Present

#### Prezza - Remote - Contract

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

Jul 2023 - Feb 2025

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

I worked as a student guide in the Egyptian Ministry of Communication's DECI, helping students navigate their desired paths. I earned their trust and appreciation by creating a healthy environment where students can openly express their weaknesses and identify their strengths. All while developing valuable technical expertise and enhancing a new set of skills of my own.

### Software Engineer & Data Analyst

Aug 2024 - Nov 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

Aug 2024 - Sep 2024

#### Banque Misr - Hybrid - Cairo - Internship

I was selected for the prestigious *Al-Rowad* Internship Program at Banque Misr. Inspired by this exposure, I'm now actively pursuing a career in MLOps, aiming to bridge the gap between machine learning and scalable, efficient deployment practices.

## Volunteer Experience

---

### Advisor

Oct 2024 - Present

#### AI Entrepreneurship Club - Hybrid - Menofia University

When AIEC entered its third season, the club underwent a full leadership refresh—bringing in new energy but also needing experienced guidance. I stepped in as an advisor to the incoming team, helping them navigate challenges, avoid past pitfalls, and keep the community's momentum strong. It was a rewarding chance to share insights while seeing fresh perspectives shape AIEC's next chapter.

### Vice-President

Oct 2023 - Oct 2024

#### AI Entrepreneurship Club - Hybrid - Menofia University

After being the HR Committee Head in Season 1, I stepped up as VP in Season 2. I rebuilt the organizational structure and supervised 7 thriving communities (including our own creations like Unimate

and 0Day) along with 5 core committees. My days blended strategic oversight with hands-on work - from conducting interviews and planning events to scripting programs and running marketing campaigns. What made it special? Working shoulder-to-shoulder with every community director and committee head to turn our ambitious seasonal goals into reality.

**Key achievements:**

- Scaled operations to support 7 communities (3 new creations) and 5 committees alongside AIEC's President
- Implemented a new organizational structure that improved cross-team collaboration
- Led 360° event execution from digital content creation to technical scripting

**Head of Human Resources Committee**

Feb 2023 - Sep 2024

**AI Entrepreneurship Club - Hybrid - Menofia University**

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

**Key achievements:**

- Implemented new reporting systems
- Optimized team structures
- Supported cross-functional creative/technical projects

## Projects

---

**Library Management System | *Banque Misr Internship***

Cloud-native application with full DevOps practices: Docker containers, Kubernetes orchestration, and complete automation via Terraform and Jenkins CI/CD.

**Key Achievements:**

- Successfully containerized and deployed a production-ready application
- Implemented full IaC practices with Terraform
- Established automated CI/CD workflows
- Gained hands-on experience with industry-standard DevOps tools

**Tech:** Docker, Kubernetes, AWS EKS, Terraform, Jenkins

**Link:** [github.com/Ahmedyehia12/LibraryManagementSystem](https://github.com/Ahmedyehia12/LibraryManagementSystem)

**Sudoku Board Generator and Solver | *Academic Project***

Intelligent Sudoku solver using backtracking algorithms (DFS) with puzzle generation capabilities. Includes board validation and console visualization.

**Key Details:**

- Engineered helper functions for board validation, printing, and input handling
- Implemented puzzle generation with uniqueness checks
- Designed a clean console visualization

**Tech Stack:** Python, NumPy, Backtracking Algorithms (Depth First Search - DFS), Git

**Link:** [github.com/MarwanMohammed2500/Sudoku-Solver](https://github.com/MarwanMohammed2500/Sudoku-Solver)

**Neural Network Techniques Explorer | *Academic Project***

Interactive toolkit implementing 6 ANN methods (RBF, PCA, SOM, ART1, Fuzzy, Genetic) with Streamlit GUI for visualization and experimentation.

**Highlights:**

- Implemented 6 ANN architectures from scratch
- Developed an intuitive web interface using Streamlit
- Deployed models for interactive public demonstration
- Currently refining for open-source release

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

**Link:** [github.com/MarwanMohammed2500/RBF-Calculator](https://github.com/MarwanMohammed2500/RBF-Calculator)

### **Smart Door/Lock | Academic Project**

AI-powered smart lock with face recognition, backup password system, and IoT connectivity. Features ESP32 integration and Telegram notifications.

**Highlights:**

- Implemented a face recognition model using OpenCV
- Implemented the door lock using Arduino, later on updated to use an ESP32, hooked with an LCD Display and an external Num-Pad.
- Used Arduino IoT Cloud to implement a simple dashboard, enabling users to manually unlock the door
- Implemented a notification system via a Telegram bot to send authorized personnel a notification if someone tries to access the area and fails all tests.

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

### **Egyptian ID OCR model | Academic Project**

Specialized OCR model for extracting information from Egyptian national ID cards. Combines optimized pretrained models with custom-trained components.

**Highlights:**

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

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

**Link:** [github.com/NASO7Y/OCR\\_Egyptian\\_ID](https://github.com/NASO7Y/OCR_Egyptian_ID)

### **MLPy | Personal Learning Project**

Open-source educational project implementing machine learning algorithms from scratch, comparing performance with established libraries like Scikit-Learn.

**Highlights:**

- Implemented different Famous machine learning algorithms from scratch and compared their performance to famous libraries like SciKit-Learn
- Will implement different deep learning algorithms (like the ones in the Neural Network Techniques Explorer and many more)
- Helped with my and some of my colleagues' and peers' learning process

**Tech Stack:** Python, SciKit-Learn, AI model training, Algorithms, Pandas, NumPy, Matplotlib, Git

**Link:** [github.com/MarwanMohammed2500/MLPy](https://github.com/MarwanMohammed2500/MLPy)

## **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, forcing a non-linear behavior into a Logistic Regression model.

### **Highlights:**

- Engineered a piecewise (non-linear) transformation to simulate 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 Learning Project***

Deployed a trained logistic regression model (from the previous project) in a web application that predicts the likelihood of a user responding to an ad campaign based on age and salary input.

### **Highlights:**

- Built a modern, responsive frontend (Node.js on Replit) 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, Pickle

**Link:** [github.com/MarwanMohammed2500/Ad-Campaign-Demographical-Prediction](https://github.com/MarwanMohammed2500/Ad-Campaign-Demographical-Prediction)