Marwan Mohammed
Data Scientist

Cairo, Egypt | May 2, 2004 | marwanmohammed056@gmail.com | +201018839464 |
github.com/MarwanMohammed2500 | linkedin.com/in/marwan-mohammed1/ |
kaggle.com/marwanmohammedsayed | medium.com/@marwanmohammed1886

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

I joined Prezza mid-development to help scale their infrastructure. I helped in troubleshooting issues while keeping everyone aligned. When needed, I even pitched in on Django development to help cross the finish line.

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 Aug 2024 - Nov 2024

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

I spearheaded the full lifecycle development of a custom management system - from initial architecture design through deployment. My focus wasn't just on delivering a working system, but on continuously refining it through iterative updates that enhanced both performance and usability.

Data Analyst Jul 2024 - Nov 2024

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

I helped the leaders at Al-Adel make more informed decisions by uncovering insights hidden in plain sight. Built them an easy-to-use dashboard that turned numbers into clear visuals, so everyone could understand what was working and what needed attention.

DevOps Intern Aug 2024 - Sep 2024

Banque Misr - Hybrid - Cairo - Internship

In August 2024, I was selected for the prestigious *Al-Rowad* Internship Program at Banque Misr, where I was a DevOps Intern. 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*

Alongside my internship team, we transformed a traditional library system into a cloud-native application with my internship team. Went beyond development to implement full DevOps practices: Docker containers, Kubernetes orchestration on AWS

EKS, and complete automation via Terraform and Jenkins CI/CD. Seeing these tools work together to streamline deployments was the perfect real-world DevOps lesson.
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/LibraryManagmentSystem

Sudoku Board Generator and Solver | *Academic Project*

Built an intelligent Sudoku solver with one of my friends using backtracking algorithms (DFS) that mimics human problem-solving logic - testing numbers, validating moves, and backtracking when stuck. Expanded it into a full puzzle generator that creates unique, solvable boards by strategically removing numbers.
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

Neural Network Techniques Explorer | *Academic Project*

Collaborated with friends to build an interactive toolkit implementing key ANN methods (RBF, PCA, SOM, ART1, Fuzzy Algorithm, Genetic Algorithm) with a user-friendly Streamlit GUI. Designed to make advanced neural concepts accessible through visualization and hands-on experimentation. (The repo is called RBF-Calculator because it was initially just that, we expanded on it later on)
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

Smart Door/Lock | *Academic Project*

Collaborated with peers to build a smart lock that uses a face recognition model we created to recognize if the person is authorized to pass. In case the model failed to

recognize someone, the system gives them a chance to enter a password; it would grant them access if they know the password and deny access otherwise.
Later, the project was updated to use ESP32 for network functionality, since it was extended to be an IoT project.
Highlights:

- Implemented a Computer Vision 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 NumPad.
- 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 Programming, ESP32, IoT

Egyptian ID OCR model | *Academic Project*

Collaborated with peers to build an OCR model trained specifically to extract information from Egyptian national ID cards. We used a mix of pretrained models that we optimized and new models we trained to make this come true
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

MLPy | *Personal Learning Project*

I created MLPy (which stands for Machine Learning with Python) to be an open source project that shows how different algorithms work under the hood, I'm still working on it, I've only implemented a few of algorithms, and not all of them are on the repo yet, but it's for my and everyone's learning purposes, because I firmly believe that understanding how those "functions" we call all the time work under the hood is crucial.
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

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

Explored a classification problem where a feature degraded performance in a logistic regression model. Instead of discarding the feature, I applied log-odds binning and one-hot encoding to introduce a non-linear structure into the linear model. This transformation improved model performance by 6% (F1-score) and 4% (accuracy).

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

Link: How to Turn a Logistic Regression Model into a Decision Tree

Ad Campaign Demographic Prediction Web App | *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