Mostafa Mohamed Mostafa

AI Engineer

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# SUMMARY



AI Engineer with hands-on experience in machine learning, deep learning, computer vision, and NLP. Skilled in building and deploying end-to-end AI solutions using Python, PyTorch, TensorFlow, Hugging Face, and LangChain. Passionate about solving complex problems and continuously improving ML model performance.

# EDUCATION



## Bachelor of Biomedical Engineering | 2020 – 2025

*Helwan University, Egypt*

* **Grade**: Excellent (88%).
* **Relevant Coursework**: Machine Learning, Artificial Intelligence, Data Structures & Algorithms, Image processing.
* Graduated with Honors (Top 5% of class).

# Internships, Trainings & Certifications



**Digital Egypt Pioneers Initiative (DEPI) |** Scholarship in Generative AI **|**  [certificate](https://drive.google.com/file/d/19rJHGb8brEr-85YSrbsh0Cm0tk8O1XTV/view?usp=sharing)

Apr 2024 – Dec 2024 | Cairo

* **Focus:** ML, DL, LLMs, MLOps (MLflow, Hugging Face), NLP with Transformers

**National Telecommunication Institute (NTI) |** Deep Learning Intern **|** [certificate](https://drive.google.com/file/d/19vJL1BkDDbv9kVvaQ8SM3wd1SbN_XghY/view?usp=drive_link)

Feb 2025 – Apr 2025 | Cairo

* Built CNNs using PyTorch & TensorFlow, deployed classification models

**National Telecommunication Institute (NTI) |** Machine Learning Intern **|**  [certificate](https://drive.google.com/file/d/19vJL1BkDDbv9kVvaQ8SM3wd1SbN_XghY/view?usp=sharing)

Oct 2024 – Dec 2024 | Cairo

* Developed and evaluated ML models using Scikit-learn and TensorFlow

**IEEE-Helwan |** Machine Learning Intern **|**  [certificate](https://drive.google.com/file/d/19vr03BseHC3RFUC56MX4aYNVHr8ia4vP/view?usp=sharing)

Sep 2023 – Nov 2023 | Cairo

**Key areas covered:**

* Worked on team AI projects, enhancing collaboration and problem-solving skills.

# PROJECTS



## Medical Q&A with RAG (Retrieval-Augmented Generation) |[repo](https://github.com/MoustafaMohammedd/Medical_Assistant_Using_RAG)

* Built a voice/text AI assistant using LangChain + LLaMA 3; integrated document retrieval for reliable responses.

## Image Captioning |[repo](https://github.com/MoustafaMohammedd/Image_Captioning)

* Encoder-decoder model using ResNet-50 + LSTM; trained on Flickr-8k dataset.

## Named Entity Recognition (NER) |[repo](https://github.com/MoustafaMohammedd/Named_Entity_Recognition_-NER-)

* Compared LSTM vs. BERT for NER; both achieved strong entity classification performance

## Sarcasm Detection |[repo](https://github.com/MoustafaMohammedd/Sarcasm_Detection)

* News headline classification using BERT (F1: 90.6%) & LSTM (F1: 83.2%)

## NYC Taxi Trip Duration |[repo](https://github.com/MoustafaMohammedd/NYC-Taxi-Trip-Duration)

* Predicted ride times using regression (RMSE: 0.4012 | R²: 0.7485)

## Credit Card Fraud Detection |[repo](https://github.com/MoustafaMohammedd/Credit_Card_Fraud_Detection)

* Handled severe class imbalance; achieved PR\_AUC: 85%

## ECG Classification |[repo](https://github.com/MoustafaMohammedd/Classification_ECG_Signals)

* TensorFlow-based arrhythmia classifier; reduced false positives by 15%

## Vehicle Recognition – Modifier 8.0 Hackathon (2nd Place) |[repo](https://github.com/MoustafaMohammedd/Vehicle_Recognition)

* Used VGG16 + Random Forest, InceptionResNetV2, and custom CNN
* Achieved validation accuracy: 95%.

# RELEVANT COURSES



**Practical Large Language Models (LLM) |** Udemy **|** 2025 **|** [certificate](https://drive.google.com/file/d/1niWqVV2ltalHJlxCWcpYARVeygyuMVyx/view?usp=sharing)

* Hands-on experience with LLMs, including fine-tuning and deployment.

**Machine Learning Diploma |** CSkilled **|** 2023 – 2024 **|** [certificate](https://drive.google.com/file/d/1A8v6rwl2hnrwcasbVxQjuvHSz821rrXz/view?usp=sharing)

* Comprehensive diploma covering supervised and unsupervised learning, deep learning and developing End to End ML projects.

**ML & DL Optimizers – Theory & Implementation |** Udemy **|** 2024 **|** [certificate](https://drive.google.com/file/d/1R455GGaXAgY3aX5n4gI1UgpdULQwzsC6/view?usp=sharing)

* Studied mathematical foundations and practical use of optimizers in machine learning and deep learning.

**Machine Learning Specialization |** Coursera **|** 2023 **|** [certificate](https://drive.google.com/file/d/1v8gjf_ftv4GDB8PKEu6iRctu_FUou7J4/view?usp=sharing)

* Introduction to AI concepts, including machine learning, neural networks, and AI applications across industries.

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# SKILLS



* + **Programming Languages:** Python, R, C++
  + **AI Frameworks:** PyTorch, TensorFlow, Scikit-learn, Keras, Hugging Face Transformers
  + **Computer Vision:** OpenCV, YOLOv10/11, EfficientSAM, U-Net, Instance Segmentation
  + **NLP:** RAG, LangChain, BERT, LSTM, LLaMA, GPT, Tokenization, Sequence Modeling, NLTK
  + **Model Optimization:** Quantization, Pruning, ONNX Runtime, Knowledge Distillation
  + **Data Tools:** Pandas, NumPy, SQL, Matplotlib
  + **Other:** Git, GitHub, DSA, MLOps, Object-Oriented Programming, Problem-Solving, Signal Processing
  + **Soft Skills**: Excellent communication, time management and teamwork

# LANGUAGES



* + **English:** Very Good
  + **Arabic:** Native