Mohamed Elmogy

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Military Service: Completed (Dec 2024)

Professional Summary

Machine Learning Engineer specializing in NLP and Computer Vision, with hands-on experience fine-tuning LLMs and transformer-based models using PyTorch and TensorFlow. Experienced in building end-to-end ML pipelines and deploying ML-powered web applications using Flask.

Experience

ML & AI Research Intern – Electronics Research Institute | Jul 2025 – Jan 2026

• Built preprocessing and evaluation pipelines for dataset cleaning, tokenization, and reproducible model comparison.
• Fine-tuned ALLAM and MAREFA transformer-based LLMs for English–Arabic translation on ArzEn and Tatoeba data sets using Qlora technique.
• Achieved a sacreBLEU score of 0.987 on a 2,000-sample validation dataset

Machine Learning Intern – Cairo University | Aug 2022 – Oct 2022

• Developed a mental health chatbot using NLP techniques and conversational AI frameworks.
• Co-authored a research paper focused on AI-driven mental wellness applications.

Education

B.Sc. in Artificial Intelligence – Faculty of Computers and Artificial Intelligence, Cairo University

Sep 2019 – Jul 2023 | GPA: 3.12

Selected Projects

• Arabic Text Summarization System:
Fine-tuned AraBART using PyTorch and Hugging Face on high-quality Arabic datasets, achieving ROUGE-L score of 60.4.
• English–Arabic Machine Translation:
Fine-tuned transformer-based LLMs and evaluated performance using BLEU metric.
• Medical Image Analysis (YOLOv5):
Fine-tuned YOLOv5 on blood cell count dataset for multi-class object detection.
• Recommendation System:
Built an online marketplace using Flask and implemented item-based recommendations using a covariance matrix.

Technical Skills

Programming: Python, C++, Java
Core CS: OOP, Data Structures, Algorithms, Database Systems, Linux, Git
ML & Data: Machine Learning, Deep Learning, NLP, Computer Vision, SQL, Model Evaluation (Precision, Recall, F1, ROC, BLEU, ROUGE, mAP)
Frameworks & Tools: PyTorch, TensorFlow, Hugging Face Transformers, NumPy, Pandas, Flask, LLMs.

Languages

Arabic: Native
English: Very Good

Certifications & Training

• SprintUp – AI and Machine Learning Foundations (Certificate of Completion)

• Onsite Training: Quantum Artificial Intelligence – Ericsson (Aug 2023)