# Abdelrhman Fawzy

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## SUMMARY

Machine Learning Engineer with 1.5 years of experience focused on building scalable AI systems and deploying real-world ML solutions. Experienced in deep learning, LLM applications, and end-to-end ML pipelines from data processing to production-ready APIs.

## TECHNICAL SKILLS

**Tech Stack:** Git, GitHub, SQL, Docker, Python, C++, FastAPI, PyTorch, Transformers, Langchain

**Machine Learning & AI:** Deep Learning, NLP, Computer Vision

**Knowledge:** Problem solving, OOP, DSA, Databases, Signal processing, Image processing

**Soft skills:** Adaptability, Communication, Critical Thinking, Collaboration

## EDUCATION

**Port Said University** **July 2024**

*Bachelor of Engineering (B.Eng.), Computer Engineering*

## EXPERIENCE

**Mountruck** **Feb. 2025 – Aug 2026**

*AI Developer* *Egypt*

- Developed and deployed AI/ML models for sales forecasting and lead scoring using Python, Scikit-learn,OpenAI API, and LangChain
- Built LLM-powered automation workflows with API integrations, reducing manual processes by 60%
- Analyzed structured datasets using SQL, Pandas, and Excel to generate actionable business insights

**Orange Digital Center** **Sep. 2024 – Oct. 2024**

*Machine Learning Engineer Intern* *Egypt*

- Developed and optimized ML pipelines for predictive modeling using Python and PyTorch
- Collaborated on projects leveraging deep learning algorithms to solve real-world data challenges
- Integrated AI solutions into production workflows, ensuring data integrity, scalability, and performance optimization

**Digital Egypt Pioneers Initiative (DEPI)** **Apr. 2024 – Aug. 2024**

*Machine Learning Engineer Intern* *Egypt*

- Built and deployed ML models using Scikit-learn & PyTorch for real-world applications
- Applied data preprocessing, feature engineering, and model optimization techniques for improved accuracy

## PROJECTS

### Tutor RAG

Python, FastAPI, Langchain, Pinecone, Groq, MongoDB

- Architected a full-stack Retrieval-Augmented Generation (RAG) platform, enabling students to query course materials and dynamically generate assessments with zero AI hallucinations
- Engineered a scalable document ingestion pipeline using Langchain and Google Gemini embeddings to chunk, embed, and index teacher-uploaded PDFs into a Pinecone vector database
- Leveraged Groq's LPU infrastructure with the LLaMA 3.3 70B model to execute sub-second semantic similarity searches and deliver context-grounded conversational responses
- Developed a custom dependency-free frontend parser (HTML/CSS/JS) that intercepts unstructured AI markdown and transforms it into stateful, auto-grading interactive quizzes in real-time
- Productized an end-to-end educational AI application featuring dual role-based access control (educators vs. students) and persistent tracking of chat histories and assessment scores via MongoDB

### GraphConnect

Python, NetworkX, scikit-learn, FastAPI

- Achieved F1=0.8659 and ROC-AUC=0.9741 on a 1.86M-node social graph link prediction task, outperforming XGBoost and Logistic Regression baselines
- Reduced real-time scoring load by 16,000× through a graph-traversal candidate generation stage (friends-of-friends heuristics), enabling sub-500ms API responses
- Designed 42 graph-aware features from scratch across degree, similarity (Jaccard, cosine), reciprocity, shortest path, and centrality (PageRank, Katz, HITS) families
- Identified and resolved probability calibration issues in tree-based models; replaced raw scores with confidence buckets to improve UX honesty and trust
- Productized a full ML pipeline: offline data preparation ’ feature engineering ’ model training ’ FastAPI endpoints

### Enterprise AI Workflow Automation

n8n, OpenAI API, Python, Webhooks, REST APIs

- Architected self-hosted event-driven automation pipelines in n8n connecting enterprise databases with LLMs for real-time lead classification
- Integrated OpenAI API models with internal webhooks and REST APIs, reducing manual business processes by 60%
- Designed error-handling and logging mechanisms across automated workflows to ensure high reliability and operational uptime

### Oracle APEX Enterprise Application

Oracle APEX, PL/SQL, SQL, REST Data Sources

- Designed and deployed responsive web applications in Oracle APEX featuring custom PL/SQL backend validations and dynamic user interfaces
- Integrated REST data sources to sync external services with Oracle database tables seamlessly
- Built real-time interactive dashboards and reporting views to deliver actionable business analytics for management

## CERTIFICATIONS

**Udacity Artificial Intelligence Nanodegree** **Apr. 2023 – Present**

*Udacity*

## LANGUAGES

**Arabic** **Native**

**English** **Proficient**

## MILITARY STATUS

**Exempted**