

MAZEN EMAD ABDELHAIM

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PROFESSIONAL SUMMARY

Results-driven AI Engineer and recent Artificial Intelligence graduate from Benha University, specializing in end-to-end Machine Learning, Deep Learning, Natural Language Processing (NLP), and Generative AI. Experienced in designing, training, and deploying scalable AI pipelines, Agentic workflows, and real-time inference systems. Demonstrated ability to process large datasets, integrate Large Language Models (LLMs), and deploy context-aware RAG applications into production environments.

EDUCATION

B.Sc. in Artificial Intelligence 2022 – 2026
Benha University - Faculty of Computers and Artificial Intelligence — Banha, Egypt GPA: 3.5/4.0

PROFESSIONAL EXPERIENCE

Junior Data Scientist / AI Engineer — X Clan Jul 2025 – Oct 2025
Mansoura, Egypt

- Processed large-scale datasets (500,000+ records) and engineered 100+ predictive features, automating data preparation and reducing preprocessing time by 30%.
- Developed and fine-tuned machine learning models for predictive analytics, boosting baseline accuracy by 15% and achieving an overall performance of 92%.
- Collaborated on containerizing and deploying models into production using FastAPI and Docker, ensuring sub-second latency for real-time inference requests.

PROJECTS

Smart Consultant AI - RAG Application — [GitHub Link](#) 2026

- Developed a bilingual (Arabic/English) Retrieval-Augmented Generation (RAG) system utilizing LangChain, FAISS vector database, and Ollama (Llama 3 8B) for context-aware document and video analysis.
- Engineered an indexing pipeline with dynamic text splitting (512-character chunks) and HuggingFace embeddings (Qwen 0.6B) for semantic search across PDFs and YouTube transcripts.
- Built and deployed an interactive Streamlit application with conversation history management to reduce LLM hallucinations and deliver accurate, context-grounded responses.

Hematology AI Diagnostic Agent — Graduation Project — [GitHub Link](#) 2025 – 2026

- Architected a clinical decision support system utilizing an agentic pipeline (LangGraph) to orchestrate 3 specialized models: a multi-modal fusion model analyzing blood smear microscopy images and OCR-parsed lab reports, and 2 dedicated models for structured CBC data processing.
- Deployed a robust RESTful API (FastAPI) for diagnostic endpoints, ensuring 100% uptime under API quota limits and enabling structured clinical report generation with risk assessment.

AI-Powered Smart Attendance System — [GitHub Link](#) Nov 2025 – Jan 2026

- Architected a real-time facial recognition attendance system using Computer Vision and Deep Learning, processing live camera feeds at 30 FPS with 99% identification accuracy for 500+ personnel.
- Engineered secure backend pipelines to manage 10,000+ daily attendance logs and deployed an administrative dashboard for automated report generation, cutting overhead by 80%.

CERTIFICATIONS & TRAINING

Agentic AI and Generative AI System Developer — DEPI 2026

- Mastered LLM architectures, transformer models, and advanced prompting techniques.
- Developed Multi-Agent Systems and RAG pipelines using Open LLMs and Hugging Face models.
- Gained hands-on experience in AI app deployment, UI development, and generative system monitoring.

Gen AI Code Camp — ITI & NVIDIA 2026

- Completed a 35-hour certified program covering Generative AI fundamentals, practical LLM application building, and augmenting LLMs using RAG.

Natural Language Processing (NLP) — NTI 2025

- Built comprehensive NLP pipelines covering tokenization, vectorization, and text classification.
- Fine-tuned pre-trained Transformer models (BERT) for downstream NLP tasks, analyzing 10,000+ text documents.

Machine Learning for Data Analysis — NTI 2025

- Conducted EDA on 20,000+ record datasets, engineered features, and optimized supervised and unsupervised ML models, achieving 90%+ test accuracy.

Artificial Intelligence Fundamentals — ITI 2025

- Designed and trained Deep Neural Networks (DNN) and Convolutional Neural Networks (CNN), achieving 85%+ validation accuracy.

SKILLS

- **Programming Languages:** Python, SQL
- **Computer Science Fundamentals:** Data Structures, Algorithms, Object-Oriented Programming (OOP), Software Design Principles
- **AI & Machine Learning:** Supervised/Unsupervised Learning, Deep Learning (CNN, RNN, LSTM), NLP, Computer Vision
- **Generative AI & LLMs:** Agentic AI, Multi-Agent Systems, Retrieval-Augmented Generation (RAG), Advanced Prompting, LLM Architecture & API Integration
- **Frameworks & Libraries:** PyTorch, TensorFlow, Keras, Scikit-Learn, LangChain, LangGraph, Hugging Face, OpenCV, Pandas, NumPy
- **MLOps & Tools:** Git, GitHub, Docker, FastAPI, Streamlit, Vector Databases (FAISS), Model Deployment & Monitoring
- **Soft Skills:** Complex Problem Solving, Analytical Thinking, Technical Communication, Agile Methodologies

LANGUAGES

- **Arabic:** Native
- **English:** Professional Working Proficiency (B2)