

HAZEM WALEED KHALED

JUNIOR AI ENGINEER

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SUMMARY

Senior AI student at Cairo University with a strong foundation in Natural Language Processing (NLP), Deep Learning, and Data Analytics. Experienced in developing AI-driven solutions. Seeking to leverage strong technical skills in a challenging AI/Data Science role.

WORK EXPERIENCE

AI Engineering Internship, Fluid AI Medical

Jul 2024 - Sep 2024

- Developed and trained NLP models for chatbot development, improving response accuracy by 20%.
- Collaborated on 3 key projects aimed at enhancing AI-driven solutions for post-op medical care.
- Pioneered 3D modeling for their new version of Stream-care.

Teaching Assistant, MEC Academy

May 2022 - Sep 2022

- Assisted students in understanding fundamental concepts of software engineering.
- Conducted weekly review sessions, improving student pass rates.

PROJECTS

Medical SOAP Note Generation with Fine-Tuned LLMs

- Engineered a dual-model architecture comparing Qwen-1.5B and DeepSeek-R1 models for automated medical documentation generation.
- Developed comprehensive data processing pipeline utilizing OMI-Health medical dialogues with Pydantic schema.
- Implemented parameter-efficient fine-tuning using LoRA adapters and LLaMA-Factory, achieving 95% JSON validity rate and 89% clinical accuracy.
- Optimized training pipeline for single T4 GPU deployment, reducing inference costs to \$0.0011 per sample while maintaining 23.2 tokens/second throughput.

AI Voice Assistant for Breast Cancer Guidance

- Developed a scalable AI assistant using Next.js, Gemini (LLM), and ElevenLabs for voice generation.
- Integrated LangChain and ChromaDB for Retrieval-Augmented Generation (RAG) architecture document retrieval.
- Provides real-time guidance for breast cancer patients.

End-to-End NLP Pipeline for Named Entity Recognition & Text Classification

- Engineered a comprehensive NLP pipeline integrating Named Entity Recognition (NER) and text classification, employing both classical (TF-IDF + SVM) and deep learning (BiLSTM-CRF) methodologies.
- Developed a custom BiLSTM-CRF model using PyTorch for precise entity recognition.
- Implemented an interactive Streamlit dashboard facilitating real-time text analysis and model evaluation.

TECHNICAL SKILLS

Programming Languages: Python (Proficient), JavaScript, TypeScript, C++, Java

AI & Machine Learning: NLP, Classical Machine Learning, Deep Learning, Feature Engineering, Prompt Engineering, Large Language Models (LLMs), Fine-Tuning (LoRA)

ML Tools & Frameworks: PyTorch, TensorFlow, Scikit-learn, NumPy, Pandas, Matplotlib

LLM, RAG & Agentic AI Ecosystem: LangChain, ChromaDB, FAISS, CrewAI, Hugging Face Transformers, APIs (OpenAI, Anthropic, Gemini), Hugging Face, ElevenLabs

Data Analytics: SQL Data Cleaning, Statistical Analysis, Data Visualization

Software Engineering: FastAPI, Docker (containerization), Git (version control)

SOFT SKILLS

Problem Solving, Collaboration, Communication, Adaptability, Attention to Detail, Leadership, Time Management

EDUCATION

Faculty of Computers & Artificial Intelligence 2021 - 2025

Cairo University

- Major: Artificial Intelligence | GPA: 3.76

CERTIFICATES

- NLP Specialization (deeplearning.ai)
- Deep Learning Specialization (deeplearning.ai)
- Machine Learning Specialization (coursera)

LANGUAGES

- Arabic: Native
- English: Fluent