Hassan Mostafa

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Profile / Summary

Dedicated **NLP Engineer** with 3+ years of experience in developing Natural Language Processing models and AI-driven applications. Skilled in machine learning, deep learning, and information retrieval with a strong background in Python and modern NLP frameworks. Passionate about building intelligent systems for text understanding, chatbots, and generative AI.

Technical Skills

- **Languages:** Python, Java, SQL, C++

- **Libraries & Frameworks:** PyTorch, TensorFlow, Hugging Face Transformers, Scikit-learn, spaCy, NLTK, LangChain

- **NLP Techniques:** Text classification, Named Entity Recognition, Sentiment Analysis, Information Retrieval, Topic Modeling, Question Answering, RAG systems

- **Databases:** PostgreSQL, MongoDB, Pinecone, ChromaDB

- **Cloud & Tools:** AWS, Google Cloud, Docker, GitHub, FastAPI, Flask

- **Other:** Data Preprocessing, Embeddings, Vector Databases, LLM Fine-Tuning

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Experience

NLP Engineer
AI Innovations – Cairo, Egypt | *Jan 2023 – Present*

- Built an NLP-powered document search system using LangChain, Hugging Face embeddings, and Pinecone.

- Fine-tuned a BERT model for sentiment analysis, improving accuracy by 12%.

- Deployed chatbot solutions with FastAPI and Docker, handling 1,000+ daily queries.

- Collaborated with data scientists and ML engineers in Agile sprints.

Machine Learning Engineer Intern (NLP Track)

DeepAI Labs – Giza, Egypt | *Jun 2022 – Dec 2022*

- Assisted in training LSTM and Transformer models for text summarization tasks.

- Preprocessed large text datasets (WikiText, GSM8K) for model training.

- Implemented evaluation metrics (BLEU, ROUGE, perplexity) for NLP models.

Research Assistant – NLP

Cairo University – Cairo, Egypt | *Sep 2021 – May 2022*

- Conducted research on Arabic text classification and information retrieval.

- Published a paper on "Improving Arabic Sentiment Analysis using Transformer Models" in a local journal.

Education

Bachelor of Computer Science

Cairo University – Cairo, Egypt | *Sep 2018 – Jul 2022*

- GPA: 3.7 / 4.0

- Courses: Natural Language Processing, Machine Learning, Information Retrieval, Deep Learning, Data Mining.

Projects

- **RAG Pipeline (LangChain + Cohere):** Built a Retrieval-Augmented Generation system for querying PDFs.

- **Image Captioning Model (PyTorch):** Converted a TensorFlow model into PyTorch and deployed via Flask.

- **Arabic Chatbot (spaCy + Transformers):** Developed an Arabic-English bilingual chatbot with intent recognition.

- **Text Summarizer (Hugging Face):** Created an abstractive summarization model using T5.

Certifications

- Natural Language Processing Specialization – DeepLearning.AI (Coursera, 2023)

- Machine Learning with Python – IBM (2022)

- Generative AI with Large Language Models – Coursera (2023)

Languages

- English – Fluent

- Arabic – Native