

Nourhan Abdelkerim

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Experience

Senior Data Scientist, FlapKap – Maadi, Egypt

Jan 2025 – Now

- Collaborate with the operations team to gather feature requirements and develop data-driven solutions
- Automate parsing of various financial documents, including bank statements, passports, IDs, and VAT certificates
- Develop keyword similarity techniques to categorize bank transactions, simplifying client transaction analysis
- Leverage LLMs and prompt engineering to extract structured data from unstructured documents
- Deploy and test models on AWS S3 staging environments to ensure performance and reliability

Researcher and Data Scientist, Limitless Labs – Zamalek, Egypt

Nov 2022 – Nov 2024

- Applied parallel processing for optimizing portfolio performance calculations
- Modified and optimize open-source packages approximately 10x times faster than the original version
- Deployed API using Docker, Docker Compose, and containerization
- Designed and implemented database models using Django
- Utilized prompt engineering to generate customized images with specific parameters
- Designed models for face swapping and enhancement in image processing
- Built a QA pipeline using prompt engineering and Retrieval-Augmented Generation (RAG) with LLMs
- Created automated presentations based on outputs from LLMs
- Designed and built API using Fast-API for generative models

Education

Queen's University in Canada, Master of science in AI and Data Science

Nov 2021 – Nov 2022

- **Coursework:** Machine learning | Deep learning | Data mining | Data analytics | Reinforcement learning
- **Graduation Project [Super Resolution for Satellite Images]:** Enhance Satellite low resolution images by using Generative Adversarial Networks to generate new images with higher resolution
- **GPA:** 4.0/4.0

Misr University, bachelor's degree in communications and electronics Engineering

Sep 2015 – Jul 2020

- **Graduation Project [Drowsiness Detection]:** Reduce the possibility of accidents by building a system using python and Open-CV which alerts the driver when he feels sleepy by tracking eyes motion
- **GPA:** 3.0/4.0

Projects

Question-entailment approach to Question Answering

- Built a system to answer questions based on Recognizing Question Entailment

Passport Scanning using OCR

- Developed tool to extract information from the Machine-Readable Zone on passports

MongoDB Query Based Agent

- Developed LLM Agent to create queries to be executed by MongoDB to answer specific questions

Skills and Technologies

Programming Languages: Python | SQL

Concepts and Technologies: Problem Solving | Data Cleaning | Natural language processing | GANs | Git | Linear Algebra | Finance | Time Series Analysis | Docker | Supervised Learning | Large Language Models | Langchain | Data preprocessing | RAG | Prompt Engineering | GPT | APIs | Genetic Algorithm | Distributed Clustering | FastAPI | Parallel Processing | Vectorization | TensorFlow | NumPy | Pandas | Matplotlib | Hugging Face | Django | Linux | Microsoft SQL Server | Hadoop | Spark | Airflow | Gemini | Claude | Ollama

Courses and Certificates

Data Science and Big Data Analytics V2

Mathematics for Machine Learning: Linear Algebra

Python for Data Science and Development