Kareem Ahmed

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EDUCATION

Cairo University   OCT 2020 – JUL 2024
B.Sc. in Computer Science with a Major in Artificial Intelligence, GPA: 3.03/4.0

EXPERIENCE

Research Scientist & Engineer Intern at Owais Capital – Remote   OCT 2023 – NOV 2023
- Fine-tuning large language models (LLMs) to adapt them to Finance domain.

Data Science Diploma at Orange Digital Center – Cairo   SEP 2022 – NOV 2022
- I learnt scrapping, data preparation, machine learning algorithms, deep learning, NLP basics, model deployment.
- Made an end-to-end project to show skills that I learnt and deployed the model using flask, the project title is **flight delay prediction.**

PROJECTS

Graduation Project
- Our graduation project involves developing a **live video translation system**, translating from English to Arabic and vice versa, with lip-syncing and maintaining the original speaker's voice.
- **Contribution:**
  - **Speech-to-Text Transcription:** Searched and used the best and fastest model for transcribing voice to text.
  - **Translation:** Identified and utilized the best and fastest model for translation from English to Arabic. As there was no existing dataset to test models, I used a dataset to evaluate model latency and performance. Fine-tuned the model to translate from the Egyptian dialect to English and deployed it on Hugging Face **[Link].**

RAG-Based Conversational Document Assistant with FAISS
- Built a **RAG pipeline** combining **FAISS-based retrieval** with **LLM-powered text generation** for intelligent document processing
- Optimized **vector search and response generation** to improve relevance, accuracy, and system efficiency.

LLM-Powered Car Data Extraction & Notification System with Gradio Deployment
- **Integrated Azure OpenAI via LangChain** to automate structured JSON extraction from car descriptions, leveraging dynamic **prompt engineering** to ensure accurate and consistent data formatting
- Developed an **end-to-end workflow with Gradio** for user-friendly deployment and SMTP-based email alerts, enabling seamless delivery of car details, images.

Image Multiclass Classification for Driver Behavior Classification Using YOLO v8
- Utilized a Kaggle dataset with 10 classes to classify driver behaviors, such as talking on the phone, drinking, and more.
- Trained YOLO v8 model on the dataset, achieving an impressive F1 score of 98% for multiclass classification.

Building a Robust Credit Risk Model with Data Validation and Imbalance Handling
- Conducted thorough data validation and cleaning to ensure high data quality.
- Addressed significant class imbalance **(only 0.34% positive cases)** using oversampling, undersampling, SMOTE, and class weighting, achieving an **F1 score of around 0.91** for the at-risk class.

Competitions

Market Type Classification Competition
Ranked 1st with a score of 98.9%, achieved solely through data analysis without machine learning models on a dataset with 3 classes.

Vehicle Recognition Competition
Ranked 3rd with a score of 94.2%, using CNNs and pretrained models on a complex vehicle dataset with 10 classes.

SKILLS

Programming Languages: Python, C++.
Data Management: SQL, MySQL, Data Cleaning, Data Preparation.
ML & DL: Machine Learning Algorithms, Deep Learning, NLP, CV, Keras, Scikit-learn, Pytorch.
Version Control: Git / Github