YOUSSEF MOHAMMED

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EDUCATION

AIN SHAMS UNIVERSITY ***Cairo, 2020 - Current***

Bachelor of Engineering
Major in Computer and Systems Engineering
Cumulative GPA: 2.9/4.0
Graduation Project: Legal RAG Consultant Sponsored by Microsoft
Relevant Coursework: Machine Learning, Deep Learning, Software Engineering, Operating Systems, Algorithms, Databases, Big Data.

EXPERIENCE

NLP Engineer INTERN- ISemantics, Cairo ***Aug 2024 - Nov 2024***

- Gaining hands-on experience in Natural Language Processing (NLP) and advanced deep learning techniques.
- Implementing real-world NLP projects using Hugging Face transformers.
- Building language applications and models based on the book "NLP with Transformers: Building Language Applications with Hugging Face."
- Specializing in deploying state-of-the-art NLP models for tasks like text classification, sentiment analysis, and named entity recognition

ML Engineer INTERN - Cellula Technologies, Remote ***Jul 2024 - Aug 2024***

- Conducted EDA to analyze data distribution and identify patterns..
- Cleaned data by handling missing values, outliers, and inconsistencies.
- Performed feature engineering for improved model accuracy and interpretability.
- Optimized models through hyperparameter tuning and feature selection.
- Deployed pre-trained models with Flask, using Pickle/Joblib, and developed user-friendly interfaces.

DevOps Engineer INTERN - Giza Systems, Cairo ***Jul 2024 - Aug 2024***

- Gained hands-on experience in Docker and Docker Swarm for container orchestration.
- Built Jenkins pipeline projects integrated with GitHub, Docker, and automated notifications.
- Developed a CI/CD Jenkins pipeline for seamless deployment of AI-related applications.
- Containerized Python applications and integrated them with standalone MySQL databases.

PROJECTS

Graduation Project: Legal RAG Consultant by Microsoft

- Developed an AI-powered legal consultation system, sponsored and mentored by Microsoft, using RAG to provide Arabic-language legal advice tailored to Egyptian law.
- Fine-tuned open-source LLMs and optimized pre-retrieval and post-retrieval methods for accurate context retrieval.
- Conducted multiple token-based and LLM-based evaluation metrics to measure the performance of the retrieval and generation

Medical-RAG-QA

- Designed a Retrieval-Augmented Generation (RAG) system for accurate medical query responses.
- Integrated LangChain with Pinecone for efficient document retrieval and contextual answer generation.
- Deployed LLaMA models via Hugging Face for scalable and precise language processing.

Malware Detection

- Utilized libraries such as XGBoost, LightGBM, and imbalanced-learn to handle class imbalance and improve model performance.
- Applied advanced data preprocessing techniques (including time-based features) and feature engineering with Pandas, Numpy, and Scikit-learn to enhance model accuracy.
- Visualized data insights and model results using Seaborn, Matplotlib, and IPython for improved interpretation.

CORE QUALIFICATIONS

Technical Skills: Machine/Deep Learning, MLOps, NLP, LLMs, RAG, Finetuning, data manipulation/preprocessing/visualization, feature engineering, models evaluation, AWS practitioner, CI/CD.
Programming skills and frameworks: Python, Langchain, LangGraph, LlamaIndex, PyTorch, TensorFlow, MLflow, Pinecone, ChromaDB, FAISS, Linux, FastAPI, Flask, SQLAlchemy, MySQL, MongoDB, Docker, Jenkins, Github, C++, C, Java.

ACTIVITIES

DEPI Graduate Microsoft Machine Learning Track ***Aug 2023 - Nov 2024***

Gained hands-on experience in the full ML pipeline, from statistical foundations and probability to Python programming. Explored machine learning algorithms in depth, advanced to deep learning techniques, language models, and transformers. Successfully deployed projects integrating learned concepts.

AIESEC Egypt ***Aug 2021 - Aug 2023***

VP - Team Leader - Member