Mahmoud Yahia Ahmed Abo El-Wfa

Cairo, Egypt
Mobile: (+20) 1112422614
Date of birth: 01/04/1998
Email: Mahmoudyahia372@gmail.com

Objective

As a Machine Learning Engineer, I am committed to leveraging my robust foundation in Python and extensive experience in AI and machine learning to develop innovative, AI-driven solutions. My goal is to continuously enhance my skills and contribute effectively to the development and implementation of advanced AI models that predict, enhance, and scale across multiple business areas. I am adept at working with various machine learning and deep learning techniques, and integrating AI solutions into complex systems. My passion for continuous learning and problem-solving drives me to stay updated with the latest advancements in the field, ensuring the delivery of high-quality, impactful AI solutions.

Education

- **Master of Electrical and Computer Engineering - Ottawa University of Canada**
  [02/2022 – 02/2023] (**Professional Master**)
  - Final grade: **9.6**
  - Project: **NER on contemporary spoken Egyptian Arabic [A+]**
- **B.Sc. degree of Computers & Information Technology Al Ahram Canadian University**
  [09/2016 – 07/2020]
  - Final grade: **3.27**
  - Project: **Text Generation using RNN and LSTM [A+]**

Work Experience

- **Advansys – Machine Learning Engineer [10/2023 – Present]**
- **American University in Cairo – Research Assistant [10/2023 – 1/2024]**
- **Route – Deep learning Instructor [07/2023 – 12/2023]**
- **Valeo - Techie Degree Internship [07/2023-09/2023]**
- **Microsoft - Internship [09/2022 - 02/2023]**
  - I worked on an exciting project focused on developing a Named Entity Recognition (NER) system for contemporary spoken Egyptian Arabic. The aim of the project was to leverage the power of natural language processing techniques to accurately identify, and extract named entities from the Egyptian dialects.
- **Digital Egypt Builders Initiative [02/2022 - 02/2023]**
  - Contributed to the development of digital solutions for various industries in Egypt.
  - Creating Machine/Deep learning models.
- **AI/ML (Freelancer) [02/2021 – 01/2022]**
  - Creating Machine/Deep learning models.
  - Computer Vision, e.g. Image Recognition, Preprocessing.
  - Implement data solutions starting with getting the raw data to deployment.
  - Work closely with the business level and stakeholders.
  - Coordinate project with other teams.
  - Ensure the quality of the core and the actual product.

- **Teacher Assistant (Al-Ahram Canadian University) [08/2020 – 11/2020]**
  - Assisted professors in preparing course materials and grading assignments.
  - Led weekly review sessions to help students understand course concepts.

Training and Courses

- **Azure Data Scientist Associate [Microsoft]** [05/2024]
- **Microcontroller Architecture and Interfacing with AVR [NTI]** [06/2023]
- **C and Embedded C Programming Trainee [NTI]** [05/2023]
- **Artificial Intelligence** Analyst 2021 - Mastery Award [IBM] [04/2022]
- **Big Data** - Mastery Award 2021 [IBM] [03/2022]
- **Predictive Analytics Modeler** 2020 - Mastery Award [IBM] [02/2022]
- **Business Acumen** [Dale Carnegie] [07/2022]
- **Natural Language Processing**, learning NLP techniques.
  Al-Ahram Canadian University, Egypt/Apr 2020.
- **Mathematical Concepts and Black box**, Advanced Mathematics
  Training.Al-Ahram Canadian University, Egypt /August 2019.
- **Presentation and Communication Skills**, Communication and soft skills.
  Al-Ahram Canadian University, Egypt/August 2017.

Projects

- Chatbot Assistant
  Developed one of Forte Cloud's products utilizing AWS Bedrock to enable seamless conversational interactions.
  Tools: AWS Bedrock, AWS OpenSearch, Microsoft Teams Toolkit.
- Passport Formal Personal Image Specification
  Created a system to detect errors in formal passport or government document photos, ensuring compliance with official requirements.
  Tools: AWS EC2, Streamlit, Mediapipe, cv2.
- Re-identification System Based on Face ID
  Built a system to count and track unique individuals in a mall or hypermarket for marketing analysis, utilizing face re-identification techniques.
  Tools: PaddlePaddle (for re-identification), Python, AWS SageMaker.
- Feedback Sentiment Analysis
  Developed a system to extract insights from text feedback, clustering similar feedback for better analysis.
  Tools: AWS Bedrock (generating and embedding models), Clustering algorithms, Streamlit, AWS EC2.
- The Federal Open Market Committee- FOMC generator.

  Experience the power of the FOMC Decision Simulator, crafted with Generative AI. Enhance your understanding of monetary policy through scenario analysis. Perfect for investors, educators, and policy enthusiasts. Explore economic dynamics and refine decision-making skills effortlessly. Master monetary insights with the FOMC Decision Simulator.

- NER on contemporary spoken Egyptian Arabic
  - Named Entity Recognition (NER) system for Egyptian dialects using the Spacy and Stanza libraries, fine-tunedwith BERT. This project involved preprocessing and cleaning of data, training and testing the model, and evaluating its performance. Through this project, I gained experience in natural language processing techniques,specifically in the context of dialectal language, and working with pre-trained models such as BERT.

Sponsored by [Microsoft]

- **Computer Vision Projects**
  - Image Classification (CIFAR10) using KNN, LR, and SVM
  - Bird Species Classification (Caltech-UCSD Birds-200-2011) using ResNet.
  - Image classification and regression (Leaf counting dataset) using Transfer learning.

- Credit Card Default Prediction Using Machine Learning Technique.

- Name Entities Extraction NER based on few-shot learning. Cases that suffer from data scarcity.

- Text classification of Gutenberg's books using (Bert-word2Vec-Glove-fast text) Distinguishing between different approaches.

- Text clustering of Gutenberg's books using (Bert-word2Vec-Glove-fast text) Similarity Inspection Using Clustering Approach.

- Atari Game (Taxi-v3) using reinforcement learning with Q-learning algorithm. Learn the value ofan action in a particular state.

- Generating Handwriting digits using GANs. Transforming noise into a meaningful output. Moreover, we can get the GAN to produce a wide variety of data

- Object Detection using Water Wave dataset for Drones. Using Deep learning to forecast Sea climate for save sailing**.**

- Text Generation Using Recurrent Neural Network and LSTM with Keras**.**
  - Developed a text generation model using Recurrent Neural Networks (RNN) and Long Short-Term Memory (LSTM) with the Keras framework. The model was trained on a large dataset to generate coherent text, demonstrating the ability to understand and replicate patterns in language. This project required a strong understanding of natural language processing and machine learning techniques.

Languages

- **English [B2]**: Very good written and spoken
- **Arabic [Native]**

AWARDS & RECOGNITION

- 2023-March 6th place Hackathons Dell Technologies.
- 2019 70th Rank among Middle East, Cyber Talents.
- 2017-2019 President, Student Union – ACU.

Skill

- **Programming**
  - Java, Python, SQL, C, C++
- **Data Science**
  - Data analysis, Machine/Deep learning, Sklearn, Keras, TF, PyTorch, Data Visualization, Cleaning, and Gathering, Data Analysis, Descriptive & Inferential statistics, NLP, Tabular Data, and Computer vision.
- **Software Engineering**
  - DS, Algorithm, Problem solving, SW design, SQL.
- **Hands On**
  - AWS Services, GCP, Docker, Azure Machine Learning
- **Others**
  - Git, Linux.