MOHAMED KHALED

+20-1011063739 · mohamedkhaleda2003@gmail.com
https://www.linkedin.com/in/mohamed-khaled-138182283/

EDUCATION

- Helwan University, Cairo, Egypt
  Bachelor of Computer Science and Artificial Intelligence (Expected Graduation: 2025)
  Current Status: Forth Year (GPA:3.1)
- **WorkCourses**: (data structures, algorithms, database systems, machine learning, evolutionary algorithms, convex optimization, software engineering(1,2), big data, distributed systems, cloud computing, natural language processing, signals, and systems, operating systems)

CERTIFICATIONS

- **Supervised and unsupervised learning:**(preprocessing,modeling, feature selection)
  in total of eight courses DataCamp December20,2023
- **Deep neural network with Pytorch**: Coursera February 16, 2024
- **Natural Language Processing with Attention Models with Pytorch:** Coursera May 1,2024

LANGUAGES AND TECHNOLOGIES

- **Proficient**: C/C+, Java, Python, SQL Server, MySQL, HTML,CSS, JavaScript, PHP, Larvel, Flask
- **Exposure**: Kafka,React JS, Django,C#

RESEARCH AND PROJECTTS

- **Stock Price Prediction**

Performed comparative analysis of machine learning models for predicting Tesla stock prices.

Built and evaluated linear regression, K-Nearest Neighbors (KNN), and Support Vector Machine (SVM) models using a 6,000-row dataset of Tesla stock data.
Achieved an accuracy of 90%

- **Image classification**

Preprocessed a dataset of 2,500 images across 10 classes by converting them to grayscale for efficient feature extraction and employed one-hot encoding for categorical labels.
Trained the model to achieve 80% classification accuracy.

- **Text Summarizer in Arabic (NLP)**

Fine-Tuned the mBERT model to develop a state-of-the-art text summarization tool tailored for Arabic. Optimized and evaluated the model on a dataset of 80,000 Rows.

- **Automated Agricultural Robot Simulation**

Technologies Used: Raspberry Pi 4,Soil moisture sensor,L293D motor driver,Keypad and LCD display,HIH-5030 humidity sensor,LM35 temperature sensor.
Plant recommendation system based on sensor data Automated water pump control for optimal soil moisture.

- **Course Management System**

Built acourse managementsystemenabling administrators to add students, instructors, and courses, maintaining data integrity with validation systems. Implemented instructor functionality allowing grade assignment to enrolled students.
Created student features enabling grade checking and course enrollment.

- **Object Detection &Image Captioning**

Developed and deployed a full-stack web application on Microsoft Azureusing Flask, integrating YOLOv5 for object detection and cropping, and ViT-GPT2 for image captioning. Trained YOLOv5 on the COCO2017 dataset with 100K images and 20K for validation, achieving a class loss of 0.02, object loss of 0.06, and train loss of 0.02. For ViT-GPT2, achieved ROUGE-2 F1 of 0.155 and BLEU score of 9.7.

- **Real-Time Data Processing&Integration**

Developed Kafka-based real-time data processing and integration solutions using PySpark and MySQL. Created a Kafka consumer to process streaming football data and update MySQL tables in real time, and a Kafka producer to ingest streaming data from CSV files to a Kafka topic for real-time analysis with Spark Streaming. These solutions enabled seamless integration of live data into MySQL for real-time reporting and analytics.

- **Full-Stack Web Application (Sold)**

Developed and sold a feature-rich full-stack web application with extensive functionalities:

- User and class management for students, teachers, and admin.
- Timetable creation and automatic generation for classes.
- Assignment management system with teacher-student interaction.
- Zoom meeting integration for virtual classes and meetings Comprehensive notification system with bulk and individual messaging.
- Fee management and financial tracking system for students.
- Implemented secure authentication with CSRF protection and rate-limiting.