ali nabil ali *computer vision engineer*

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banha - qalyubia

Exempted

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Professional Experience

11/2024 – present

AI Engineer Fulltime
Singularity

- Designed and optimized **object and face detection models** using **TensorFlow, PyTorch, and OpenCV**, improving accuracy through **hyperparameter tuning, data augmentation, regularization, and transfer learning**.
- Developed and deployed **RESTful APIs** with **Flask and FastAPI** to serve ML models, ensuring seamless backend integration and production deployment.
- Engineered **DeepStream-based solutions** to extract metadata and process **30 video streams**, enhancing tracking and **re-identification (ReID) capabilities**.
- Integrated **Elasticsearch** for real-time metadata storage, similarity search, and efficient object tracking.
- Worked with **NVIDIA Metropolis** to enhance AI-driven **video analytics, smart surveillance, and large-scale tracking solutions**.
- Collaborated with data engineers and software developers to deploy **computer vision solutions** into scalable production environments.

04/2024 – 10/2025

Machine Learning Intern
AI & Data Science - AWS Machine Learning Enginee
Designed, developed, and deployed scalable AI solutions using **AWS services** such as **SageMaker**, **Lambda**, and Step Functions. Built and optimized end-to-end machine learning pipelines by integrating **Glue, Redshift, and S3** for advanced data processing. Implemented deep learning models with TensorFlow and PyTorch on high-performance **AWS instances**, enhancing predictive capabilities and automating MLOps workflows for CI/CD, model monitoring, and retraining.

09/2023 – 06/2024

Graduation Projects Support
Valeo
Received substantial support and mentorship from **experienced professionals at Valeo**, significantly enhancing the quality and effectiveness of my project. Their expert guidance and insights played a crucial role in the successful completion of the project, improving both technical proficiency and **problem-solving skills**. This experience reinforced the importance of collaboration, continuous learning, and industry-driven innovation in achieving excellence.

Education

09/2020 – 05/2024
banha, qalyubia

Bachelor's degree
Benha university

soft skills

Communication Skills

Critical Thinking

Time Management

Attention to details

Fast Learning

Skills

Computer Vision & Deep Learnin

Data Visualization

Python (numpy , pandas ,matplotlis ,seaborn, tensorflow,torch,open-cv ,sklearn,opencv,mediapipe,nltk)

Big Data & AI Infrastructure

- Integrated **Elasticsearch** for real-time metadata storage and similarity search in tracking applications.
- Worked with **NVIDIA Metropolis** to enhance AI-driven video analytics and smart city applications.

DeepStream & Real-Time Video Analytics

- Developed and optimized **DeepStream-based** solutions for extracting metadata and processing **30 video streams** simultaneously.
- Designed a **tracking and re-identification (ReID) pipeline** for multi-stream object tracking.

Jupyter Notebooks

Git and Github

Certificates

- Machine Learning and Deep Learning – IBM iX
- CCNAv7: Introduction to Networks – Cisco
- Provision and Manage Azure Cognitive Services – Microsoft
- Prepare for AI Engineering – Microsoft

Courses

Nvidia AI for All From Basics to GenAI Practice

Data Science Orientation – Coursera

Intro to Data Analysis – Udacity

Artificial Intelligence and Machine Learning in Business – Alison

SQL Server 2014: Management Studio – Alison

Projects

Graduation Project: Driver Monitoring System
Leveraging computer vision and deep learning to detect eye states (open/closed) with 98% validation accuracy and 97% training accuracy. Implemented real-time inference in Python, utilizing Mediapipe for eye and head direction detection and optimizing it with Mediapipe Lite. Transferred the system to C++ for deployment on Raspberry Pi 4 and integrated it with an HMI (Human-Machine Interface) for data transmission and user interaction.

Regression-model-detect-gold_price
Developed a gold price prediction model using regression techniques, leveraging historical market data, economic indicators, and financial trends for accurate forecasting. Conducted extensive data collection, preprocessing, and feature engineering to enhance predictive performance. Applied feature selection methods to identify key factors influencing gold prices, optimizing the model for high accuracy. Achieved a prediction accuracy of 0.983 R^2 score, ensuring robust and reliable price forecasting. This project demonstrates expertise in machine learning, financial analytics, and AI-driven decision-making for market trend predictions

Twitter sentiment analysis DEPI graduation project
performing data preprocessing, feature engineering, and polarity scoring to classify tweets as positive, neutral, or negative. Achieved an accuracy of 96% with SVM, validated through confusion matrices and visualizations, providing actionable insights into social media sentiment trends.