TAMMAM ALHADWAH

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AI Specialist with expertise in Deep Learning, Computer Vision, and Natural Language Processing. Skilled in developing, fine-tuning, and deploying models for real-world applications. Seeking to apply technical and research capabilities in challenging AI roles with meaningful impact.

SKILLS

- Artificial Intelligence & Machine Learning:Computer Vision, Natural Language Processing (NLP), Data Preprocessing, Data Augmentation, Machine Learning, Deep Learning, Model Development, Training, Evaluation, Hyperparameter Tuning, Transfer Learning, quantization and deployment, Convolutional Neural Networks (CNNs), Transformers, LSTMs.
- Libraries & Frameworks: PyTorch, PyTorch Lightning, TensorFlow, Keras, hf transformers, Scikit-learn, OpenCV, Albumentations, Ultralytics, TensorRT, Fast API, Flask API, Plotly dash.
- Programming & Tools: Python, Git, google colab, kaggle notebooks

EDUCATION

Bachelor of Information Technology and Communication Engineering (AI Specialization)

Arab International University – Daraa, Syria Oct 2021 – Jul 2025

GPA 3.0 / 4.0 | Top 2 private university in Syria (2025)

PROFESSIONAL EXPERIENCE

Automated Laser Tag Turret with Object Tracking

- Robotics & Computer Vision Deployment Project
- Designed and built an automated turret capable of tracking and following moving targets for laser tag gameplay.
- Integrated a YOLO11 object detection model with real-time video processing from a mounted phone camera for accurate real time multi-object tracking.
- Implemented keyboard/manual override controls and exponential smoothing for precise movement control.
- Developed an Arduino-based motor control system with relays actuator control.
- Deployed optimized model inference using TensorRT for high-performance deployment on Nvidia GPUs.
- Tech Stack: Python, OpenCV, Ultralytics YOLO, TensorRT, Arduino

Wildfire & Agricultural Monitoring and Response Console (WAMRC)

- R&D Computer Vision Project
- Contributed to the development of an AI-based monitoring system for early wildfire and agricultural threat detection using drone footage.
- Built a tiny detection transformer using mobile net as backbone for a hybrid custom transformer encoder to compare with a fine-tuned YOLOv8 Nano object detection model on 21K images dataset to detect fire and smoke instances.
- Achieved ~80% mAP through multiple rounds of hyperparameter tuning with aggressive data augmentations tuning for high sensitivity for best recall.
- Applied Exponentially Moving Average (EMA) smoothing to enhance the stability and reliability of the perception output.
- Deployed the optimized model using TensorRT on NVIDIA GPUs for high-performance, real-time inference.
- Tech Stack: Python, PyTorch-lightning, Ultralytics, OpenCV, TensorRT

Arabic Talking Therapy Chatbot

- Natural Language Processing (NLP) & Conversational AI Project
- Developed a therapeutic conversational AI agent designed to provide support and engage in multi-turn dialogue in Arabic.
- Built a custom dialogue model architecture from scratch tailored for generative conversations in the Arabic language.
- Leveraged PyTorch Lightning for efficient model training and management.
- Focused on generating empathetic, contextually aware, and helpful responses for a therapeutic setting.
- Tech Stack: PyTorch, PyTorch Lightning, Python

Furniture Classification using 3D Point Clouds

- 3D Computer Vision & Deep Learning Project
- Developed a system to classify furniture objects based on LiDAR-like 3D point cloud representations.
- Implemented the PointNet deep learning architecture using Keras to process irregular point cloud data.
- Achieved 80.4% classification accuracy on a custom furniture point cloud dataset.
- Tech Stack: TensorFlow, Keras, Python

Lane Departure Warning System

- Computer Vision & Deep Learning Project
- Built a real-time system to detect and warn of potential lane departures using dashcam imagery.
- Designed and trained a custom Convolutional Neural Network (CNN) from scratch to classify vehicle position relative to lanes, outputting the recommended direction of steering to stay in lane.
- Tech Stack: Python, TensorFlow, Keras, OpenCV

Cyberbullying classification using BERT

- Cleaned a noisy and mislabeled dataset of 1690 entries of social media comments and messages
- Finetuned Distell BERT from huggingface transformers to accurately classify Cyberbullying and harassment
- Achieved 95% accuracy.
- Tech Stack: Python, Pandas, hugging face transformers.

Climate Temperature Forecasting using LSTM
Time Series Forecasting & Deep Learning Project

- Developed a time series forecasting model to predict future temperature based on the Jena Climate Dataset.
- Preprocessed multi-year climate data, resampling to an hourly frequency and preparing sequences for time series modeling.
- Implemented and trained a Long Short-Term Memory (LSTM) deep learning model using TensorFlow/Keras to capture temporal dependencies.
- Achieved a Root Mean Squared Error (RMSE) ~0.71.
- Tech Stack: Python, TensorFlow, Keras, Pandas, NumPy, Matplotlib

CERTIFICATES

- AI for Autonomous Vehicles and Robotics – university of michigan
- Neural Networks and Deep Learning – DeepLearning.AI
- Machine Learning with Python – IBM
- Calculus for Machine Learning and Data Science – DeepLearning.AI
- Linear Algebra for Machine Learning and Data Science – DeepLearning.AI
- Detecting COVID-19 with Chest X-Ray using PyTorch – coursera project network
- Deep Learning with PyTorch: Object Localization – coursera project network

LANGUAGES

Arabic: fluent, English: fluent