Mahmoud Saeed Mansour

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Education

Pharos University 2022 – 2026

Bachelor of Science in Computer Science & Artificial Intelligence *Alexandria, Egypt*

Projects

Tic Tac Toe game | *Dart, Flutter*

- Developed a Mobile application using Flutter framework, this app contain a two choice to select to play against the bot or against friend , this app also contain an algorithm for the bot and also have a message to print who win the game with a two choice to play again or exit the game .

Face Mask Segmentation during COVID-19 | *Python , Cnn , Tensorflow , Keras , CSS , HTML , Flask*

- Developed a binary semantic segmentation model for face mask detection using ResNet50 and VGG16 as feature extractors. Implemented custom upsampling layers with ReLU and a sigmoid-activated output for accurate mask segmentation. Trained the model on COVID-era image data split into train/validation/test sets and saved it as model.h5. The model was deployed in a Flask web app with a custom HTML/CSS interface for real-time image upload and mask detection .

Tic Tac Toe game | *Python , PyQt5 library , OOP , Minimax Algorithm (AI)*

- Developed a single-player Tic Tac Toe game in Python using PyQt5 with a sleek, interactive GUI. Integrated MiniMax algorithm for a smart AI opponent that makes optimal moves. Included symbol selection, dynamic board updates, and color-coded move indicators. Added visual enhancements such as a gradient title bar and message box alerts for game results .

Real-time Sign Language Recognition | *Python , OpenCV , MediaPipe , Flask , scikit-learn*

- Built a real-time ASL recognition system using MediaPipe Hands and OpenCV for gesture detection and visualization. Extracted and normalized hand landmarks, saved to Pickle for efficient Random Forest training with 14-sign classification. Achieved high accuracy and deployed the model in a Flask Web app with live webcam feed and prediction overlays. Implemented custom finger-colored landmark drawing and bounding boxes for intuitive and user-friendly feedback .

Real-time object detection | *Python , Yolo , tkinter*

- Developed a real-time object detection system for self-driving applications using YOLOv8 with both webcam and video support. Built a tkinter GUI and OpenCV interface for live detection with class display, FPS calculation, and annotated video streaming. Integrated a threaded video stream for efficient frame capture and playback from pre-recorded driving videos .

Real-time lane detection | *Python , kalmen , tkinter , Hough transform , resnet50 , open-cv*

- Developed a real-time lane detection system for self-driving applications using a different ways like segment with resnet50 for multiple lanes or with kalmen filter and with Hough transform with both real-time and video support. Built a tkinter GUI and OpenCV interface for live detection with class display, FPS calculation, and annotated video streaming. Integrated a threaded video stream for efficient frame capture and playback from pre-recorded driving videos .

Real-time Traffic light detection | *Python , Yolo , pytorch , open-cv*

- I used the YOLOv8 model to detect traffic lights in real-time or video input . I trained the YOLOv8 model on my custom dataset to detect traffic lights . The model is saved as ONNX format . The model processes each frame , classfies traffic lights as Green , Yellow , Red using a color map , and makes decision based on the detected signals . It then displays the results with bounding boxes and labels on the video feed .

Real-time Traffic signs detection | *Python , tensorflow , keras , open-cv , sklearn*

- I built a cnn model to train it on the data to make a detect and classfication for traffic sign , I have a 43 classes for sign so i used activation function called softmax on the output layer , I save model as h5 to use it in real-time or video input .

Technical Skills

Programming Languages: Python, Java , Dart , C#
Software: Dart , Flutter , PyQt5 , tinkerkad , Flask , Java-GUI
AI/ML& python-libraries:CNN , tensorflow , pytorch , open-cv , sklearn , scipy , MediaPipe , scikit-learn , numpy , pandas , ultralytics(yolo)
Concepts:Artificial Intelligence, Machine Learning, Neural Networks, DeepLearning , NLP , Data Science
Operating Systems:: Windows, Linux (Ubuntu)

Training

Amit January 2024 – August 2024
Machine Learning & AI Diploma *Alexandria, Egypt*

New Horizons September 2023 – January 2024
Flutter Application Development *Alexandria, Egypt*

European Educational Group July 2024 – September 2024
Deep Learning *Alexandria, Egypt*

Languages

Arabic: Mother Tongue
English: Intermediate