Md: Israil Hosen

Roll: 2010876110

Neural Network and Deep Learning Assignment-7

[Code link]

a

[**Code link**]

The object detection on videos (some limitation, i can not capture videos on my phone. i was download a video form internet and test on that video) using yolov8n pretrain model using python ultralytics libary the output is: [**click here and download the output video**]

i was test three models which are the yolov8n, yolov11n, yolov12n the performance results are given below in image format:-

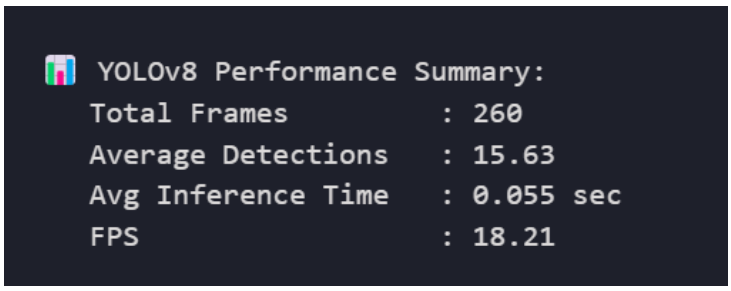

Figure 1: Yolov8n performance summary

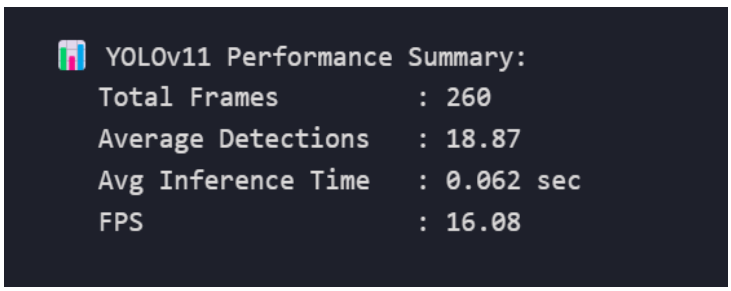

Figure 2: Yolov11n performance summary

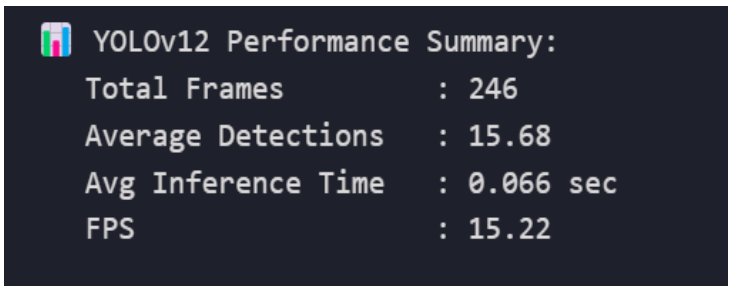

Figure 3: Yolov12n performance summary

b

[**Code link**]

The WIDER FACE dataset was preprocessed and split into training and validation sets then converted to YOLO format. A YOLOv8 model was fine-tuned using Ultralytics training pipeline for face detection. The output are given below:-

Figure 4: input image

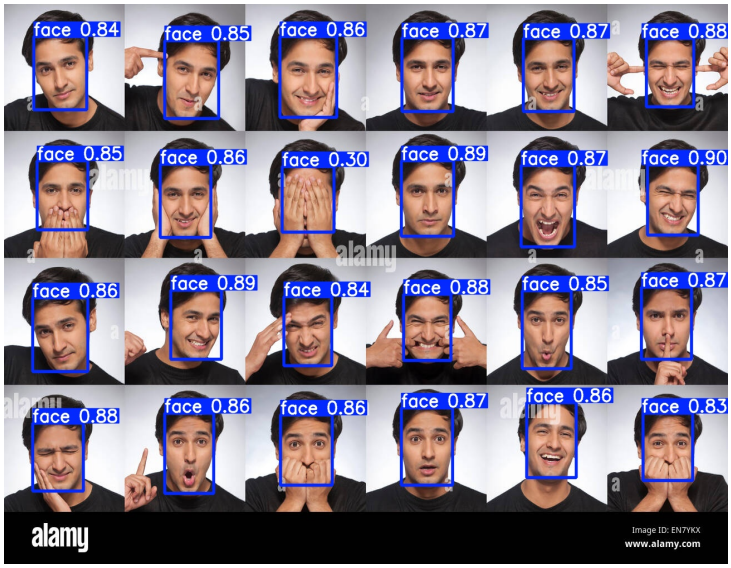

Figure 5: output image

c

[**Code link**]

The fine-tuned YOLOv8n face detector was compared with the reference face detector from the provided GitHub repository YOLOv8n_100e model using the WIDER FACE validation set. The output of the both model are give below:-

Figure 6: input image

Figure 7: Output generated by the YOLOv8n model

Figure 8: Output generated by the YOLOv8n_100e(from github repo) model

d

[Code link]

A face detector with YOLOv1 architecture was built and trained on the WIDER FACE dataset and split into training and validation sets. The output are given below:-

Figure 9: input image

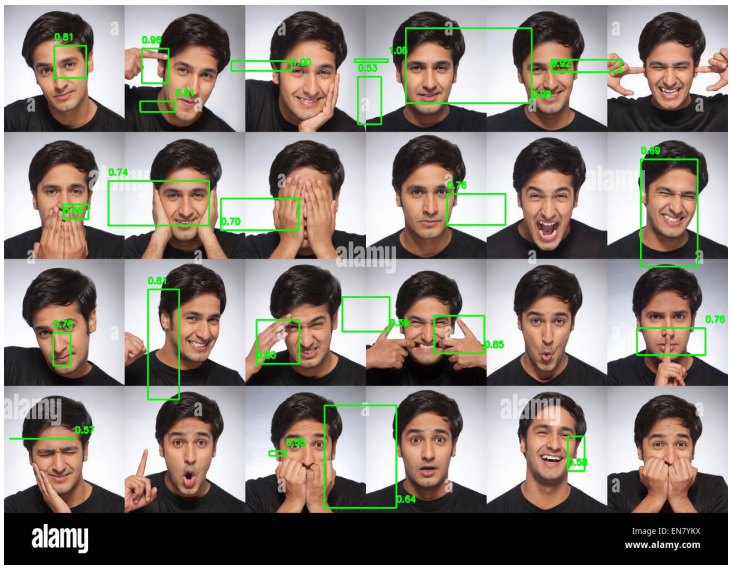

Figure 10: Output generated by the YOLOv1 model