7)

The shape (1783, 4) of the boxes.eval() array means that 1,783 bounding boxes passed the confidence threshold after the yolo\_filter boxes function was applied in the YOLO object detection model. Initially, the model predicted 1,805 bounding boxes (from a 19x19 grid with 5 boxes per cell), but only 1,783 had confidence scores above the threshold, so these boxes remained. The maximum possible number of boxes would be 1,805 if all predictions met the threshold, and the minimum could be 0 if none did.

8)

The yolo\_anchors.txt file has 10 values, which represent the height and width of 5 anchor boxes. Using anchor boxes in object detection helps detect objects of different sizes and shapes, speeds up training, and improves the model’s ability to detect small or long objects. These predefined boxes make calculations simpler and improve recall. They also help in scenarios with many objects close together and give better starting points for finding objects, making object detection more efficient and accurate.

10)

Uploaded image - My\_new\_image.jpg

A street with cars on it

Description automatically generated

A street with cars on it

Description automatically generated

It identified 2 cars that were near to the camera. But did not identify cars far away from the camera. Undetected traffic lights, bike.

A street with a green light

Description automatically generated

A street sign on a street

Description automatically generated

It identified a truck and one traffic light. But undetected other traffic lights.