HOW TO RUN THE PROJECT

1. Setup Environment:

2.Install required libraries: YOLOv8, EasyOCR, NumPy, OpenCV, etc. You can install these via pip:

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pip install numpy opencv-python easyocr

3.Download YOLOv8:

4.The YOLOv8 implementationis on my GitHub. Download the repository to your local machine.

5.Download Pre-trained Weights:

6.YOLOv8 requires pre-trained weights for object detection. Download the YOLOv8 weights from the official source or compatible weights trained on the COCO dataset.

7.Configure YOLOv8:

Modify the configuration files if necessary. These files include settings like the path to the weights file, the path to the configuration file, and the list of classes.

8.Prepare Input Images/Video:

Gather the images or videos containing vehicles' number plates that you want to recognize.

Object Detection with YOLOv8:

9.Use YOLOv8 to perform object detection on the input images/videos.

Extract Number Plate Regions.

10.After detecting vehicles, extract the regions containing number plates from the detected bounding boxes. This step may involve cropping the images.

11.Display or Save Results:

12.Display the original images with bounding boxes around the detected vehicles and the recognized text overlaid on the number plate regions. Alternatively, you can save the results to files.

Run the Script:

python

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import cv2

from easyocr import Reader

from yolov5 import YOLOv5

# Initialize YOLOv8

yolo = YOLOv8(weights='path/to/weights.pt', device='cuda')

# Initialize EasyOCR

reader = Reader(['en'])

image = cv2.imread('input\_image.jpg')

results = yolo.detect(image)

for box in results['boxes']:

x1, y1, x2, y2, conf, cls = box

plate\_region = image[y1:y2, x1:x2]

plate\_text = reader.readtext(plate\_region)

print("Number Plate Text:", plate\_text)

cv2.rectangle(image, (x1, y1), (x2, y2), (0, 255, 0), 2)

cv2.putText(image, plate\_text, (x1, y1 - 10), cv2.FONT\_HERSHEY\_SIMPLEX, 0.5, (0, 255, 0), 2)

cv2.imshow('Result', image)

cv2.waitKey(0)

cv2.destroyAllWindows()