Automating License Plate Detection

YOLO & OCR Technique

Objective

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intro

Problem Statement

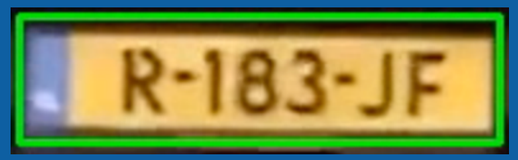
Efficient detection and recognition of car license plates is crucial for traffic management and law enforcement.

Objective

Use a pre-trained YOLOv8 model to detect license plates and Pytesseract for OCR to convert them into readable text.

Preprocess

Detected the plate



1- Crop the image

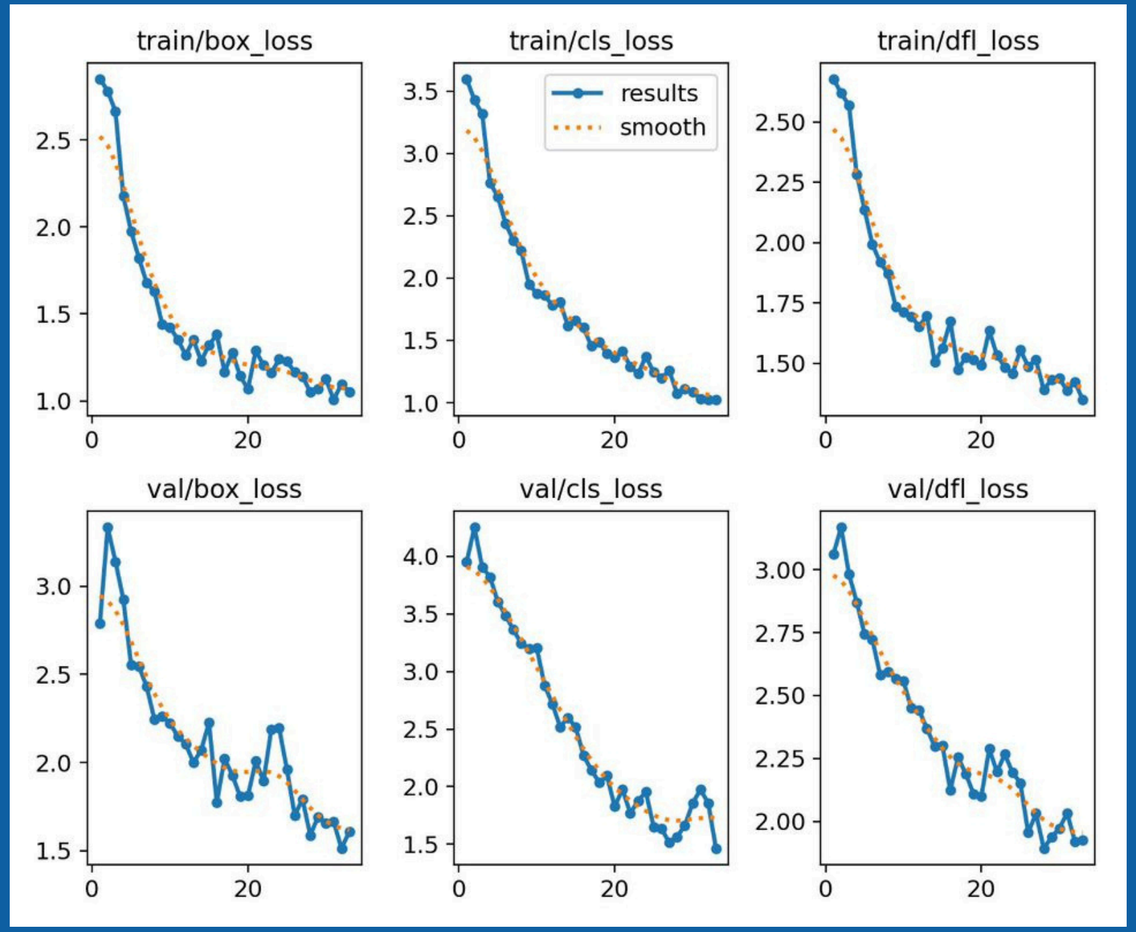
2- Convert it to grayscale

Model Training

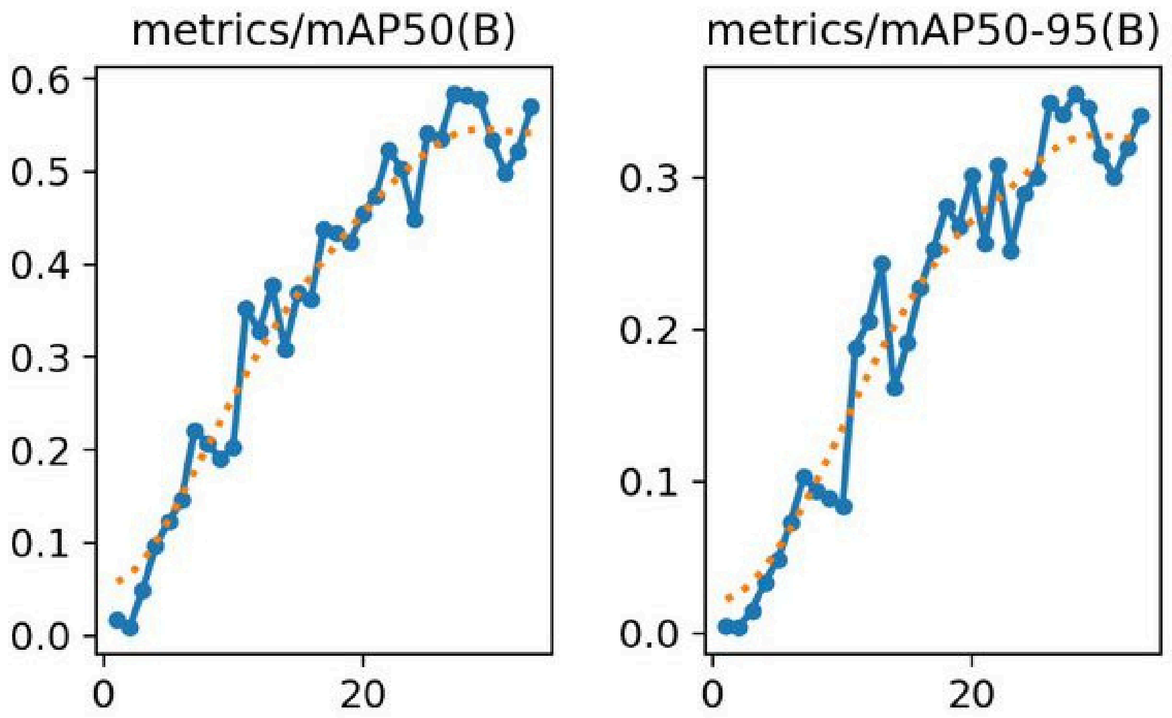
```
new_model.train(data='/content/Car-Plate-1/data.yaml',
                epochs=100, batch=64, patience=5)
```

results

Model Evaluation



mAP


metrics/mAP50(B)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
20
metrics/mAP50-95(B)
0.3
0.2
0.1
0.0
0
20

Challenges

Integration

Combining YOLO and OCR into a single workflow it is technically challenging, particularly in terms of synchronization and processing time.

Text Distortion

OCR is struggle with skewed, curved, or rotated text, especially in natural scenes where text is not neatly aligned.

Training Data

Collecting and annotating a sufficient amount of labeled data for YOLO and OCR can be time-consuming and may require preprocessing for better results.

Conclusion

Thank you!

Do you have any question ?

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