Road Sign Detection Using Yolo

Mini-Project 3

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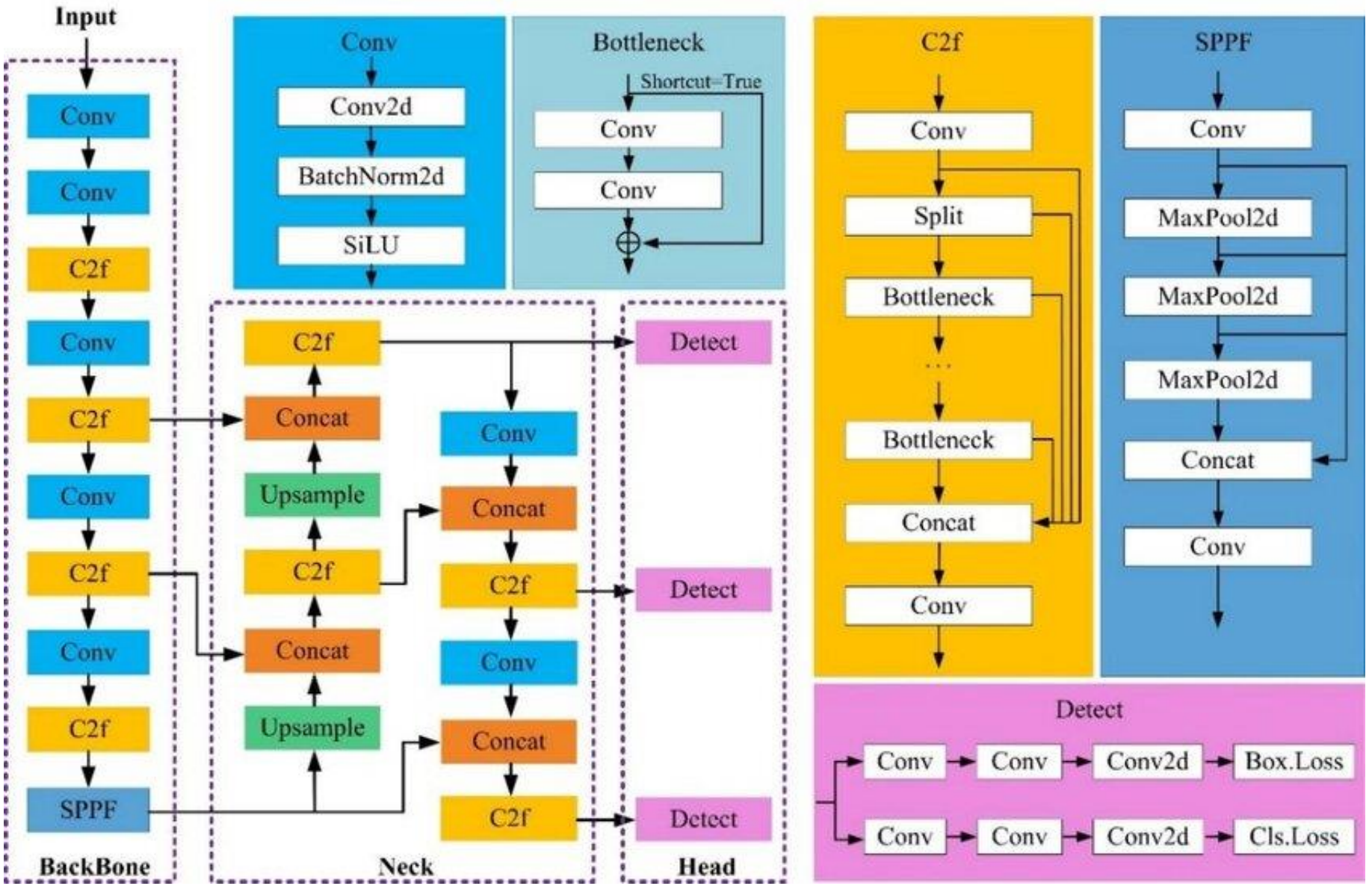
Dataset Overview

- Classes:
  - Green Light
  - Red Light
  - Speed Limit 20 – 120 mph
  - Stop
- Total Number of Classes: 14

YOLOv8

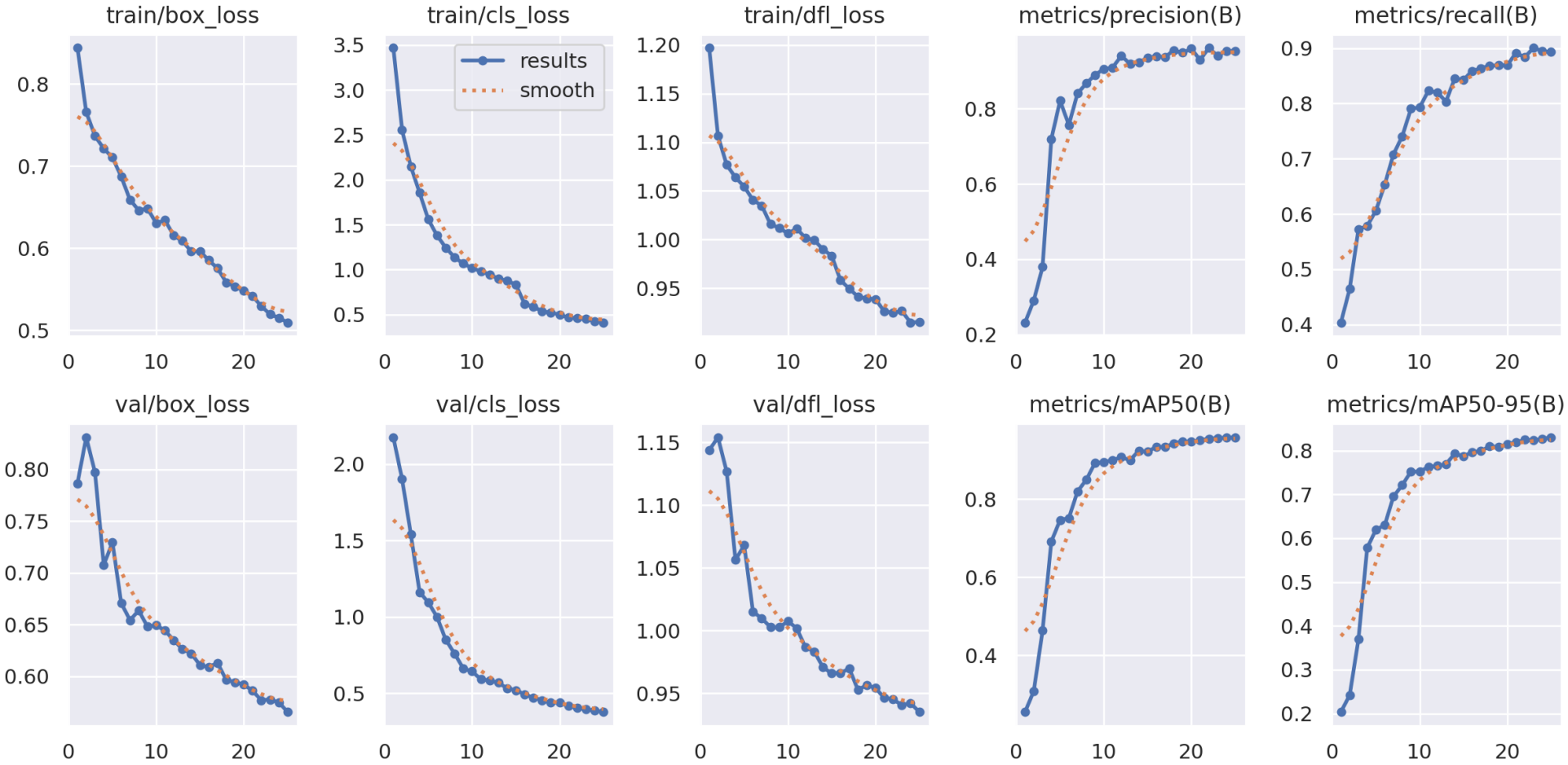


Research on Bubble Detection Based on Improved YOLOv8n

Training

```
from ultralytics import YOLO

Final_model = YOLO('yolov8n.pt')

Result_Final_model = Final_model.train(

data="/content/drive/MyDrive/DSAN6500_Miniproject3/car/data.yaml",
    epochs=25,
    project="/content/drive/MyDrive/DSAN6500_Miniproject3/outputs",
    name="train_1”

)
```

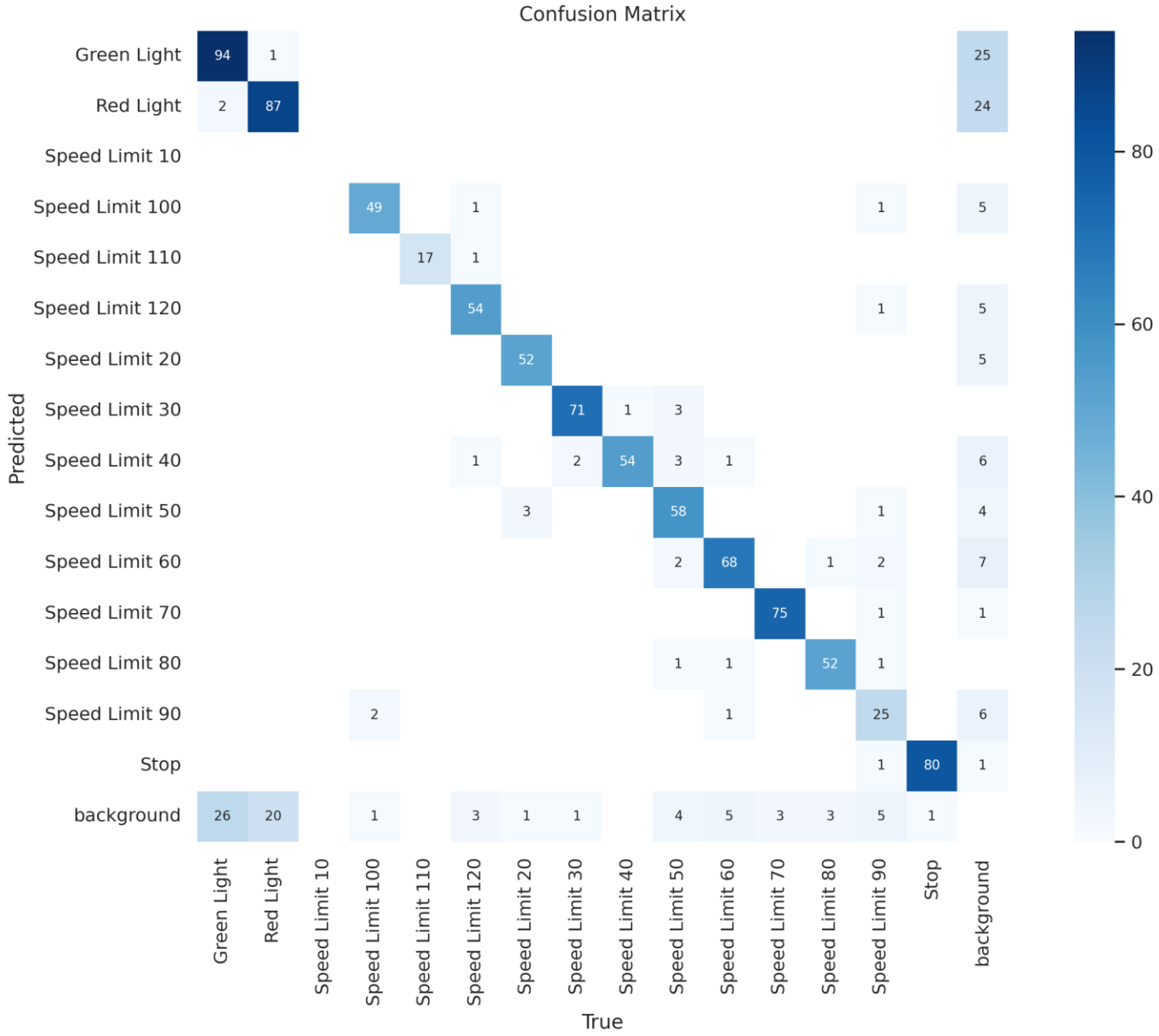
Performance



Performance

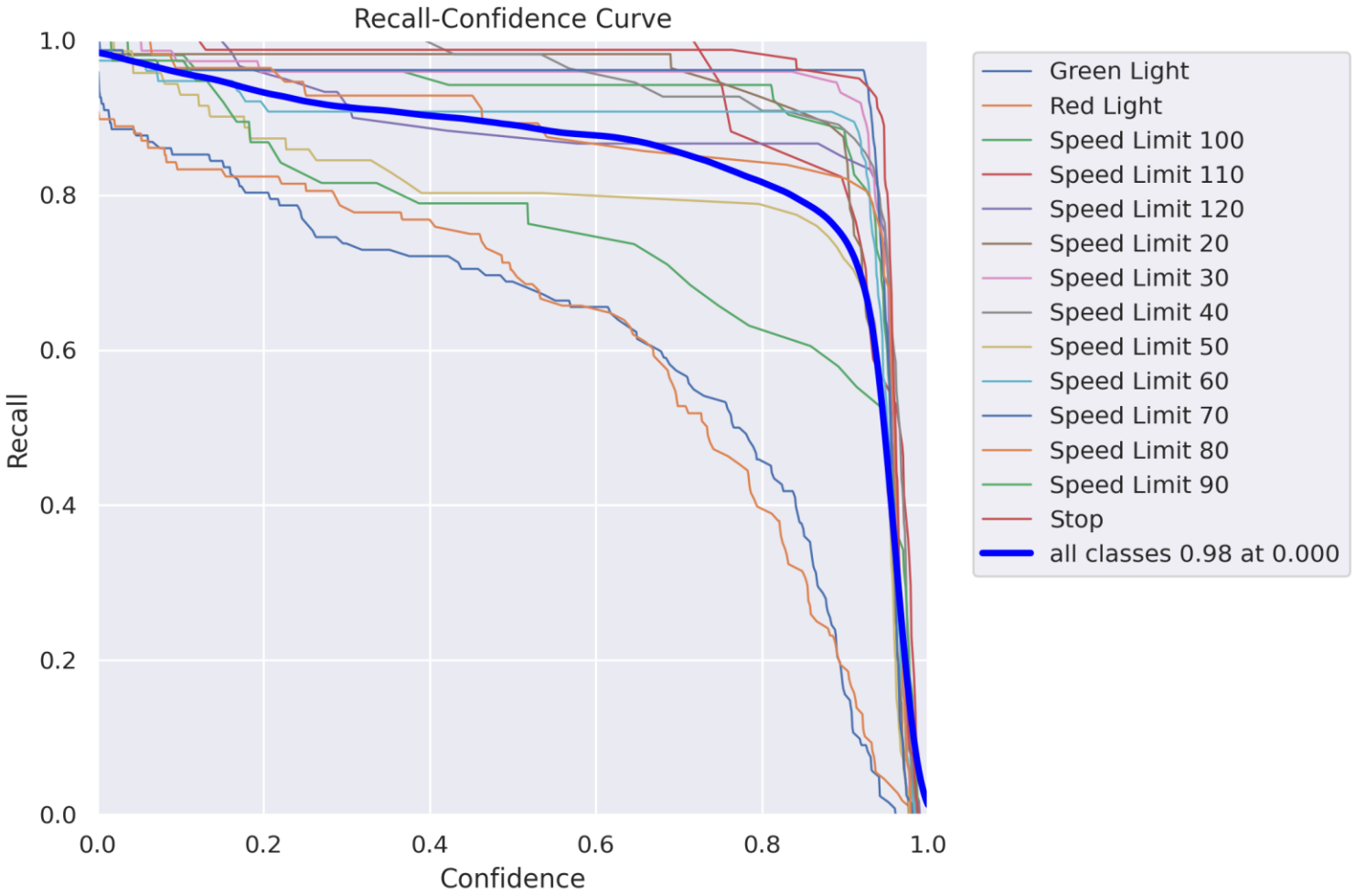
Class	Images	Instances	Precision	Recall	mAP@0.5	mAP@0.5:0.95
All Classes	801	944	0.953	0.893	0.958	0.832
Green Light	87	122	0.885	0.696	0.826	0.507
Red Light	74	108	0.877	0.723	0.828	0.511
Speed Limit 100	52	52	0.963	0.942	0.986	0.881
Speed Limit 110	17	17	0.944	1.000	0.995	0.920
Speed Limit 120	60	60	0.981	0.876	0.989	0.916
Speed Limit 20	56	56	0.985	0.982	0.986	0.869
Speed Limit 30	71	74	0.952	0.959	0.988	0.924
Speed Limit 40	53	55	0.906	0.982	0.988	0.879
Speed Limit 50	68	71	0.994	0.803	0.948	0.855
Speed Limit 60	76	76	0.919	0.908	0.960	0.876
Speed Limit 70	78	78	0.990	0.962	0.984	0.905
Speed Limit 80	56	56	0.969	0.893	0.983	0.874
Speed Limit 90	38	38	0.992	0.789	0.961	0.790
Stop	81	81	0.982	0.988	0.995	0.933

Performance



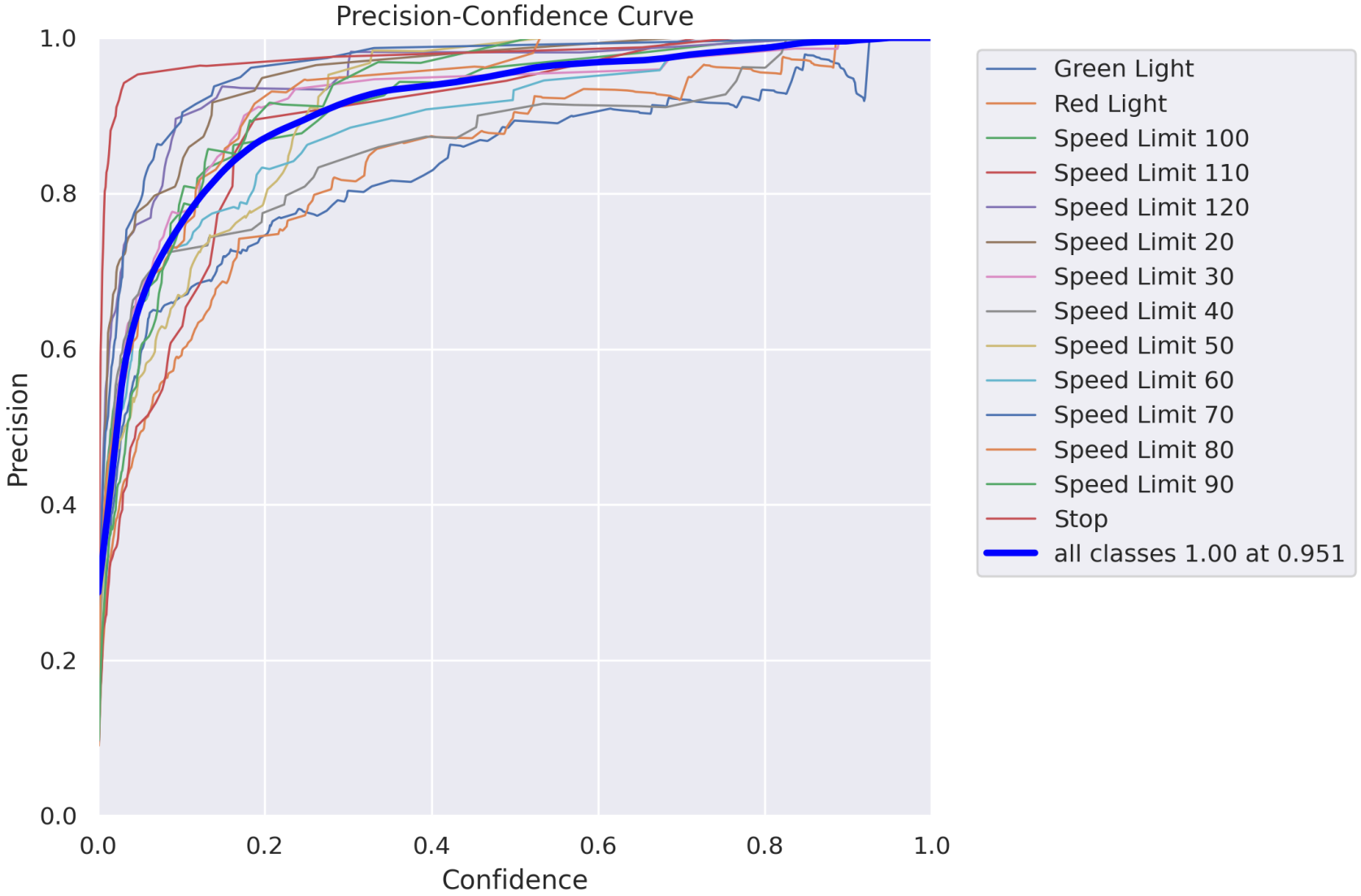
On Validation Set

Performance



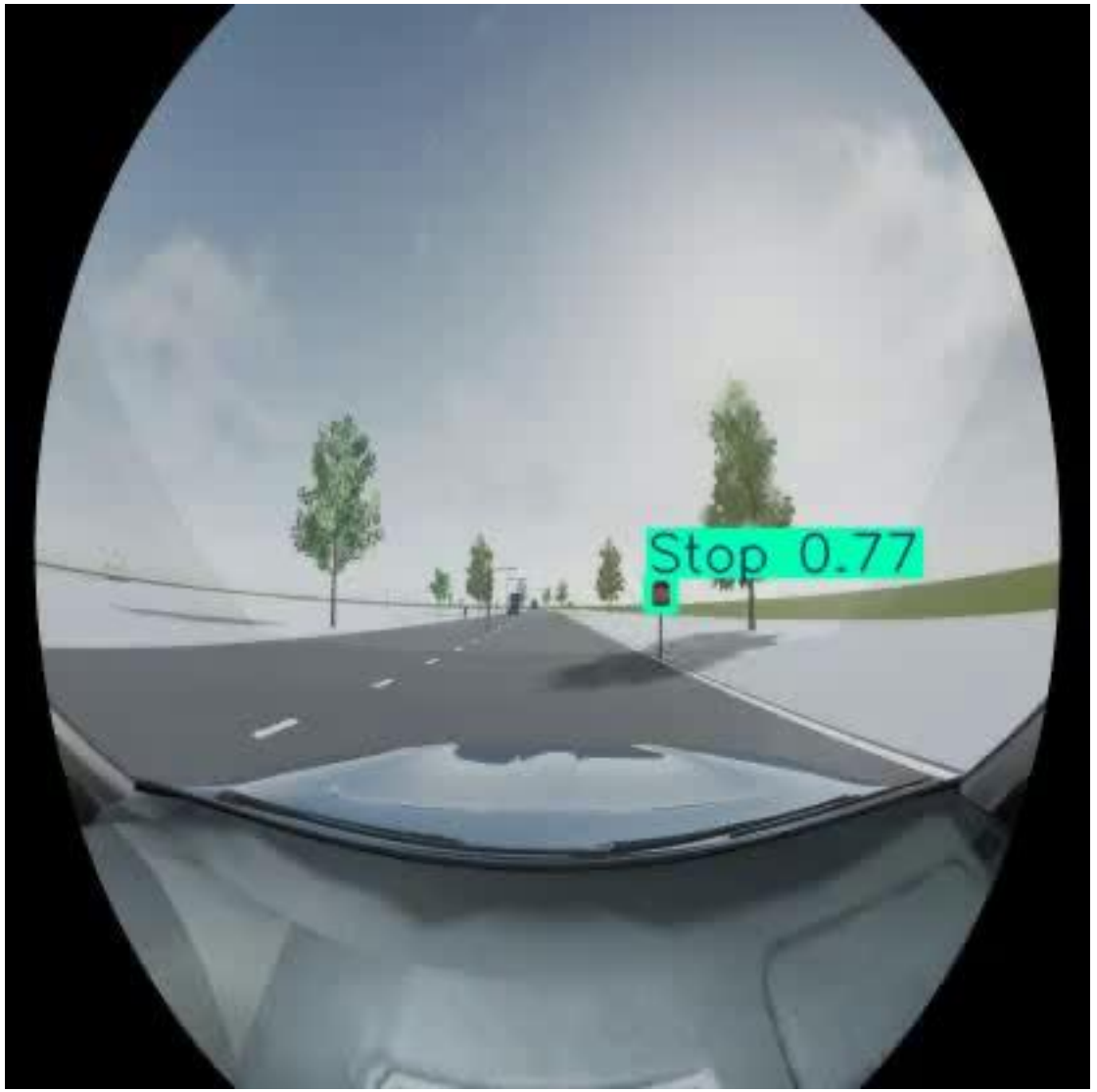
On Validation Set

Performance



On Validation Set

Sign Detection



Video