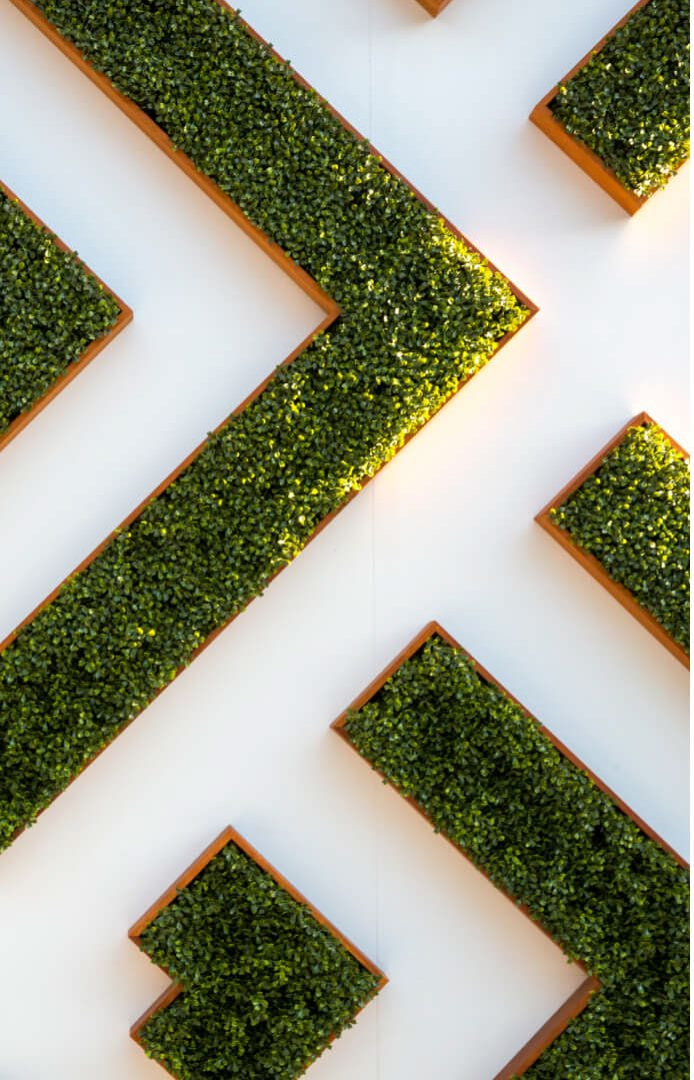
安全操作检测

郁博文

2023-12-29

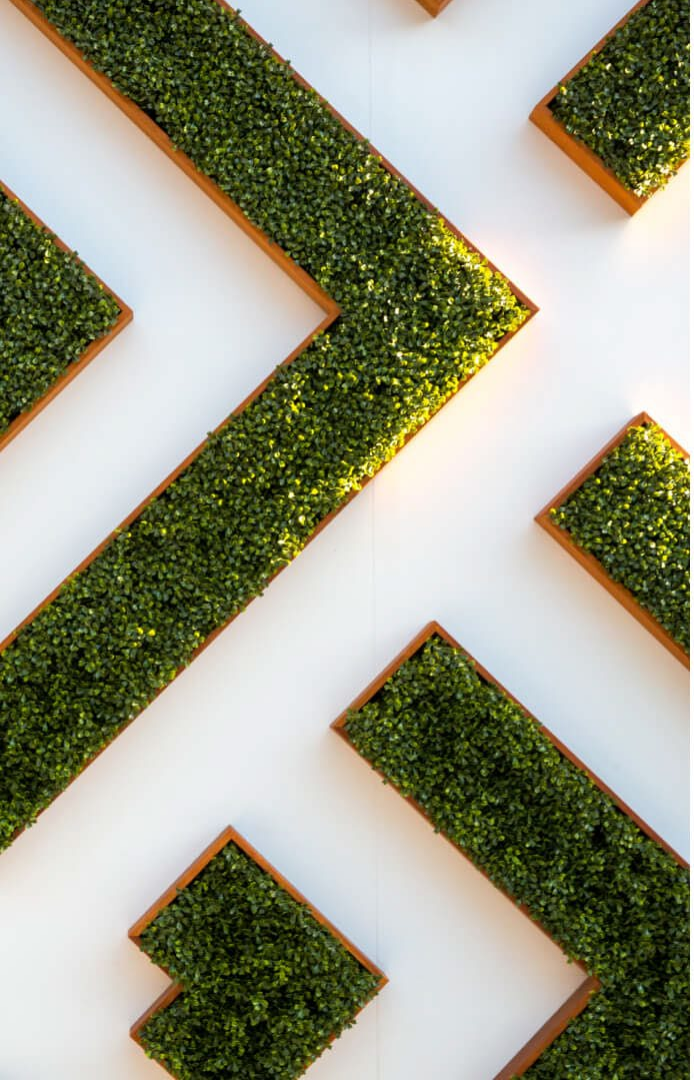


01

模型选择

模型选择

- 由于先前使用的resnet模型的效果不好，同时这次是一个六分类的任务，所以选择了yolov5，所选用的分别为yolov5s,yolov5l,yolov5m和yolov5n。

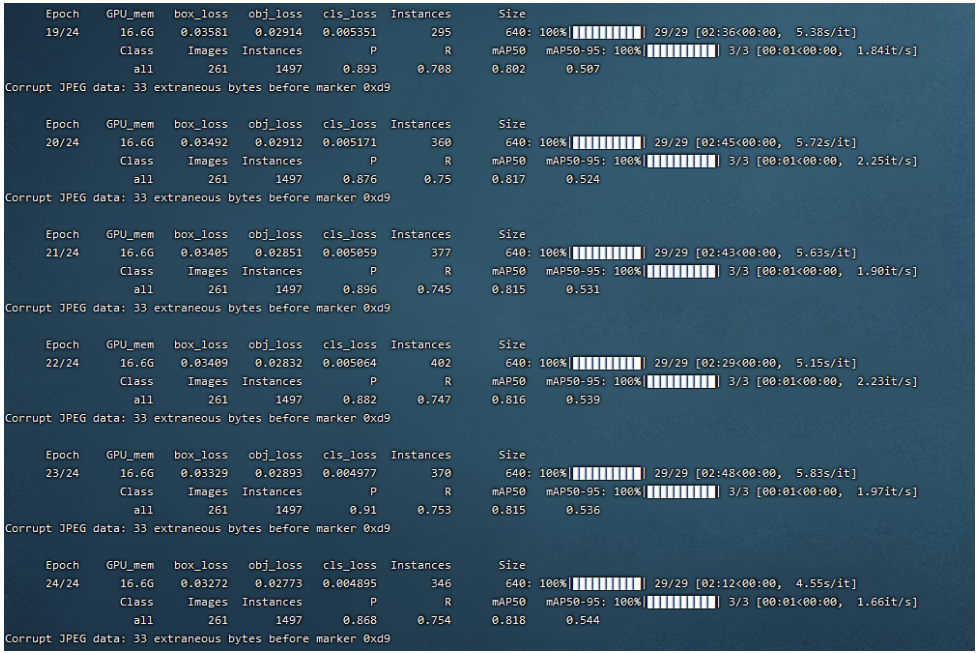


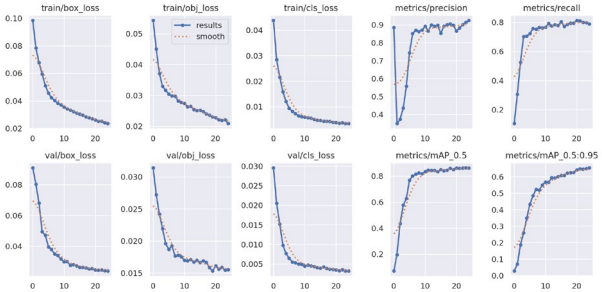
02

训练过程

训练过程

训练使用了一张4090，batchsize为64，num_workers设置为8，每个模型训练25个epoch





YOLOv5l
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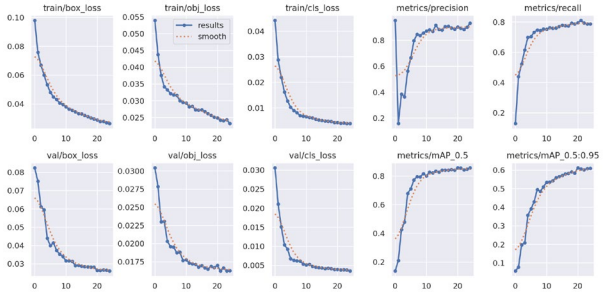

YOLOv5m
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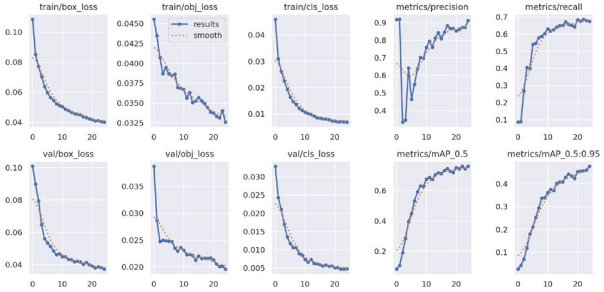

YOLOv5n
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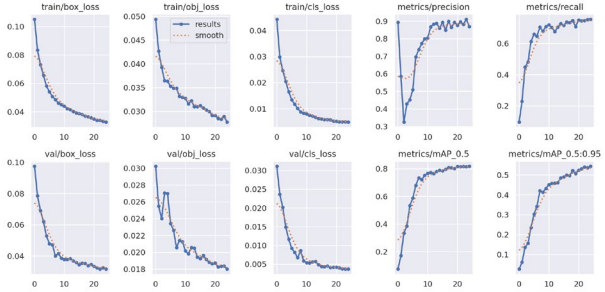

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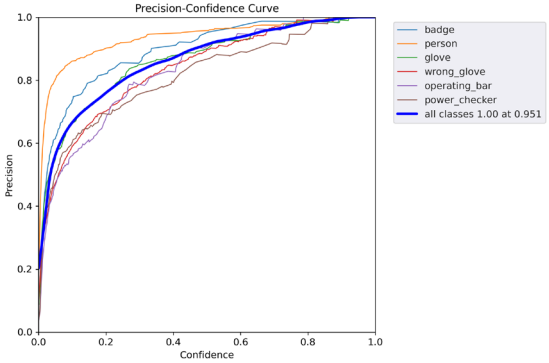

YOLOv5l
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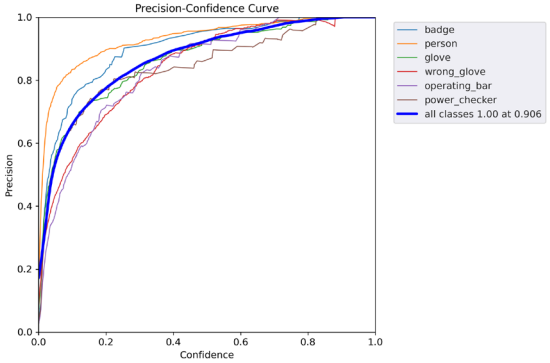

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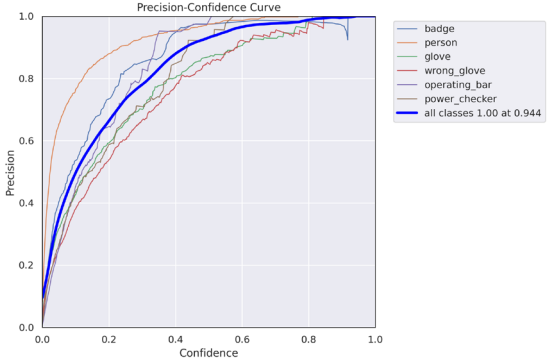

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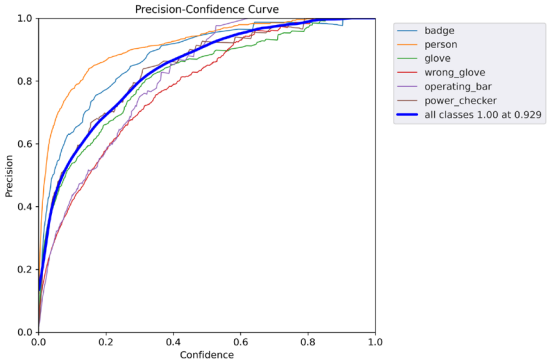

YOLOv5s
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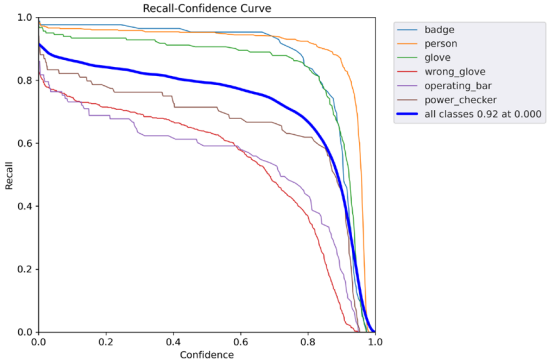

YOLOv5l
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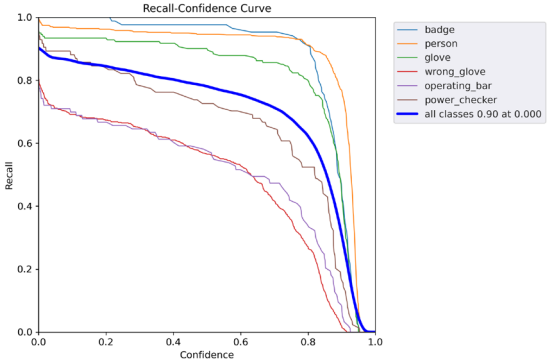

YOLOv5m
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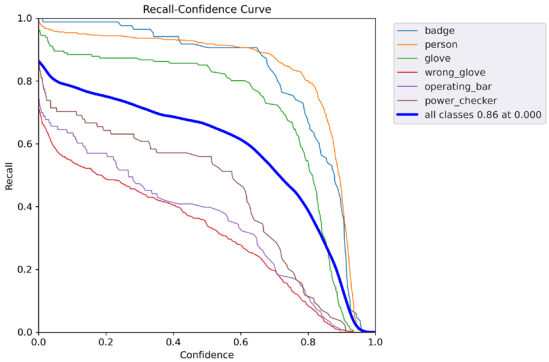
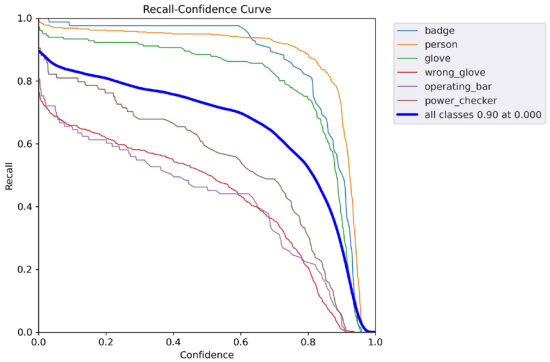
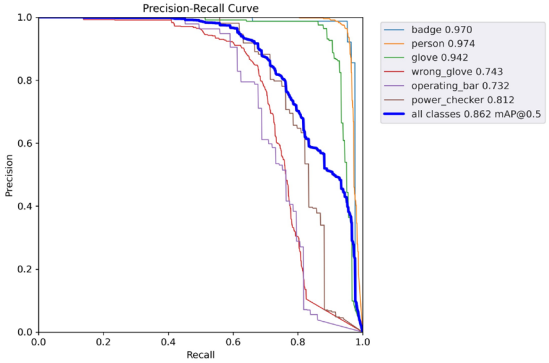


YOLOv5n
mAP50:0.75956 mAP50-95:0.47685



YOLOv5s
mAP50:0.81817 mAP50-95:0.54375



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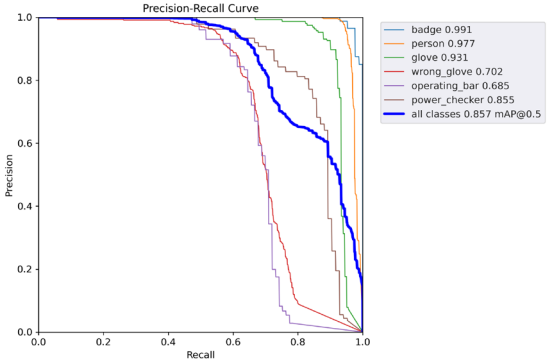

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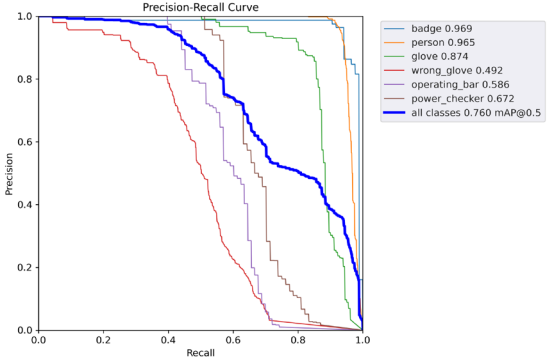

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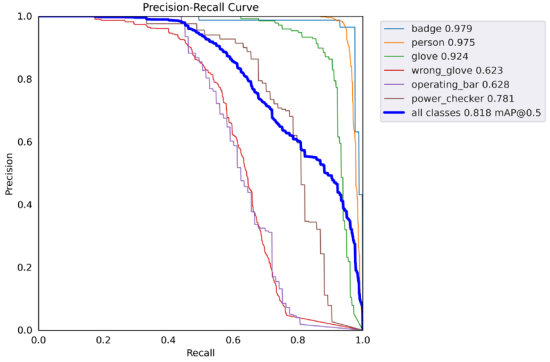
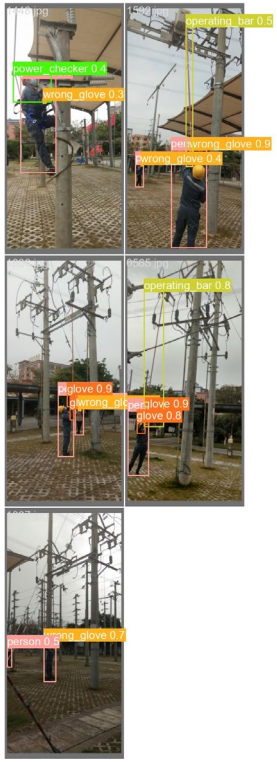
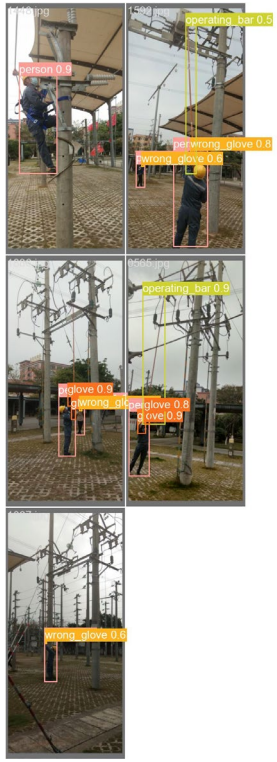


YOLOv5s
mAP50:0.81817 mAP50-95:0.54375

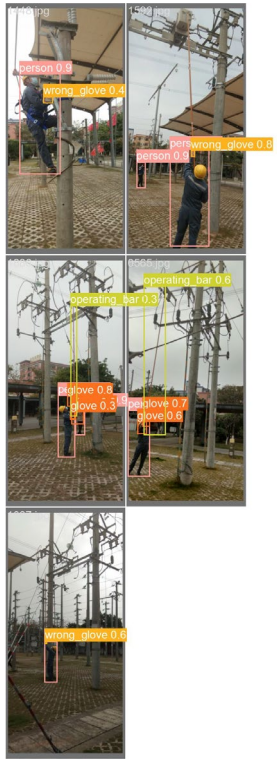
LABEL



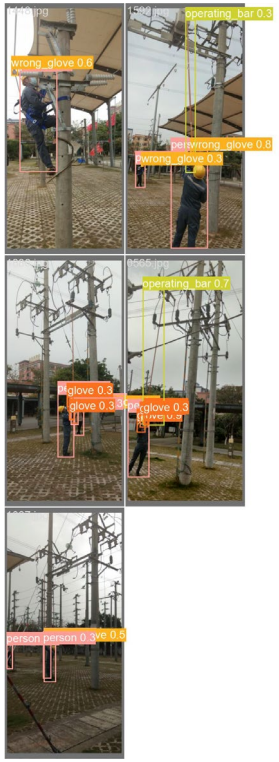
YOLOv5l



YOLOv5m



YOLOv5n



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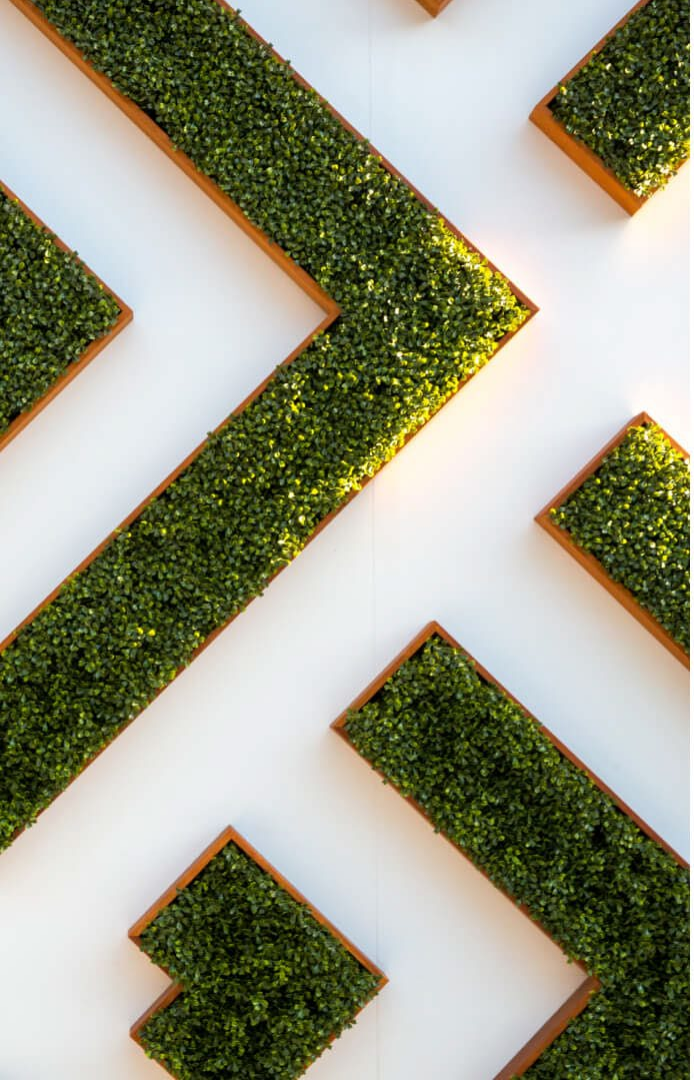
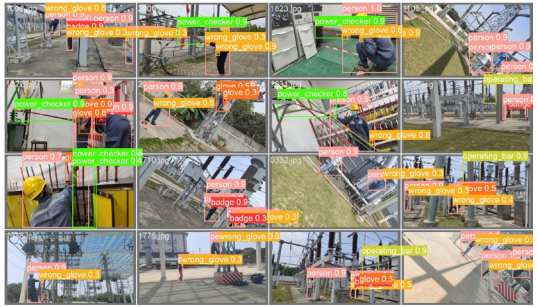


03

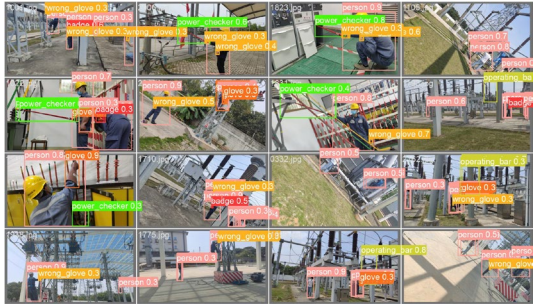
结果示例

YOLOv5l

LABEL



YOLOv5m



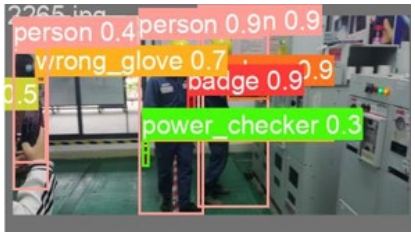
YOLOv5n

YOLOv5s

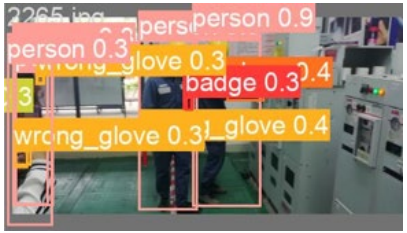
- 正如训练过程中所展示的一样，四个模型对于wrong_glove这个类别的判断能力相较其他类别都略低，在观察结果后，发现有许多误报现象，例如下图
- 经过观察，除了yolov5n以外，其他三个模型都没有正确检测到左下角没有佩戴绝缘手套的情况

YOLOv5l

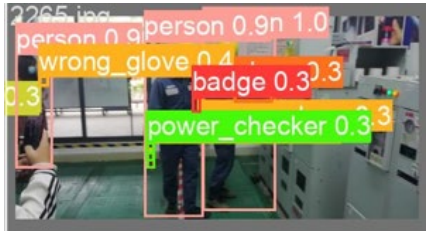
LABEL



YOLOv5m



YOLOv5n



YOLOv5s

THE END

THANKS

结果和代码链接：
https://drive.google.com/file/d/1shiTQ3muNdaBpURjfdZ3MRwdHGNP43uO/view?usp=sharing