任务二-yolo进行整车识别总结文档（*最近真的有点忙*）

租用服务器并搭建深度学习的环境

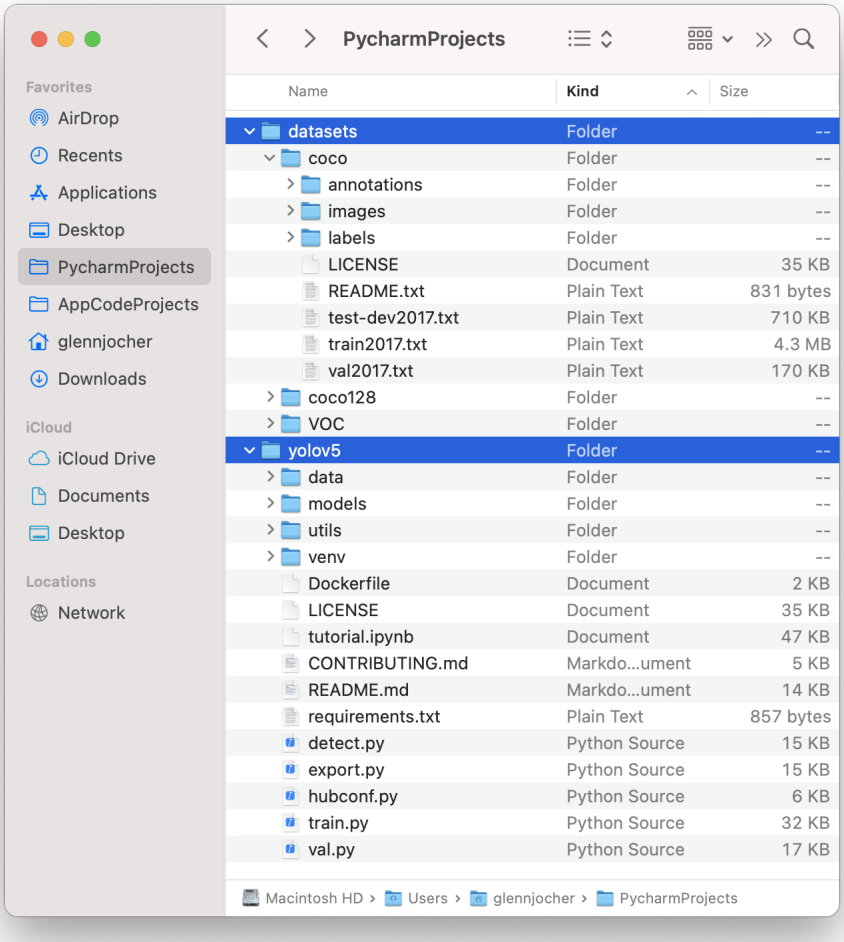
这边选择AUtoDL，部分原因是因为电脑根本没有英伟达的显卡，而且yolo和任务一不太一样，任务一可以实现本地部署

1. 观看视频
   环境搭建
2. 跟着视频做就可以了
3. GitHub的源代码
   ultrakytics

分类数据集

1. 解压缩包，创建三个文件夹（train，val,test）
2. train：80%
   test：10%
   val:10%

> 做的时候出现很奇怪的bug，就是通过finalshell传文件的时候图片和lable会传不进去，然后训练就找不到图片或者label，然后报错也和视频中的一样



参考： 正确构建数据集

代码

train

``

```
form ultralytics import YOLO
``# Load a model
model = YOLO("./ultralytics/cfg/models/v8/yolov8.yaml")  # build a new model from scratch
model = YOLO("./yolov8n.pt")  # load a pretrained model (recommended for training)

`# Use the model
model.train(data="./ultralytics/cfg/datasets/coco128.yaml", epochs=10, batch =32)  # train the model

metrics = model.val()  # evaluate model performance on the validation set
```

```
`# results = model("https://ultralytics.com/images/bus.jpg")  # predict on an image
`# path = model.export(format="onnx")  # export the model to ONNX format
```

``

predict

参考文献
predict.dox

``

```
immport cv2
from ultralytics import YOLO

model = YOLO('./runs/detect/train7/weights/best.pt')

`# 打开视频
video_path = "./深度学习任务二测试视频.mp4"
cap = cv2.VideoCapture(video_path)

`# 获取视频帧的维度和速率
frame_width = int(cap.get(3))
frame_height = int(cap.get(4))
fps = cap.get(cv2.CAP_PROP_FPS)

`# 创建VideoWriter对象
fourcc = cv2.VideoWriter_fourcc(*'mp4v')
out = cv2.VideoWriter('./output.mp4', fourcc, fps, (frame_width, frame_height))

`# 循环视频帧
while cap.isOpened():
`# 读取帧
    success, frame = cap.read()
    if success:
 `    # 预测
        results = model(frame)
 `    # 可视化结果
        annotated_frame = results[0].plot()
        out.write(annotated_frame)
    else:
 `# 最后结尾中断视频帧循环
    break

cap.release()
out.release()
```

``

识别后的图片

识别后

反思

整车识别还是识别的太少，隐藏的车子没有识别到，找机会再调整一下