

머신 러닝 프로그래밍

term project



01. 개요

과제 개요

과제 목표

- 머신 러닝을 이용하여 자신만의 프로젝트를 만들기

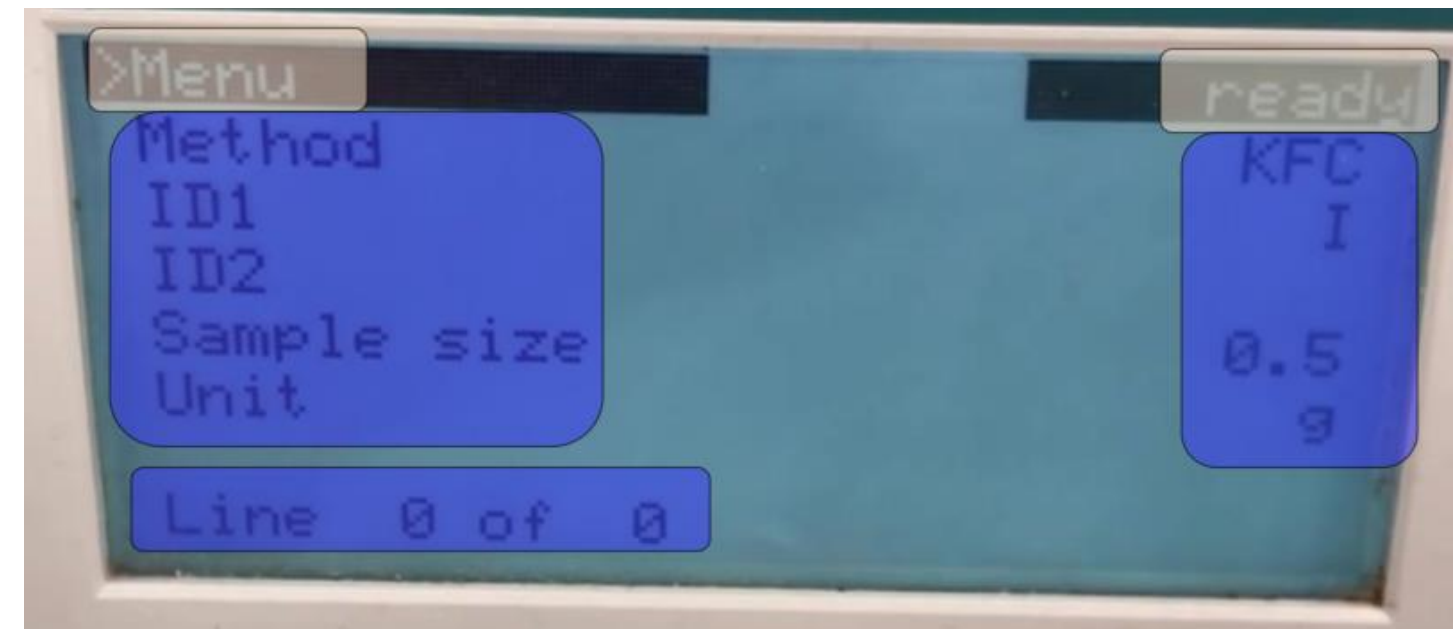
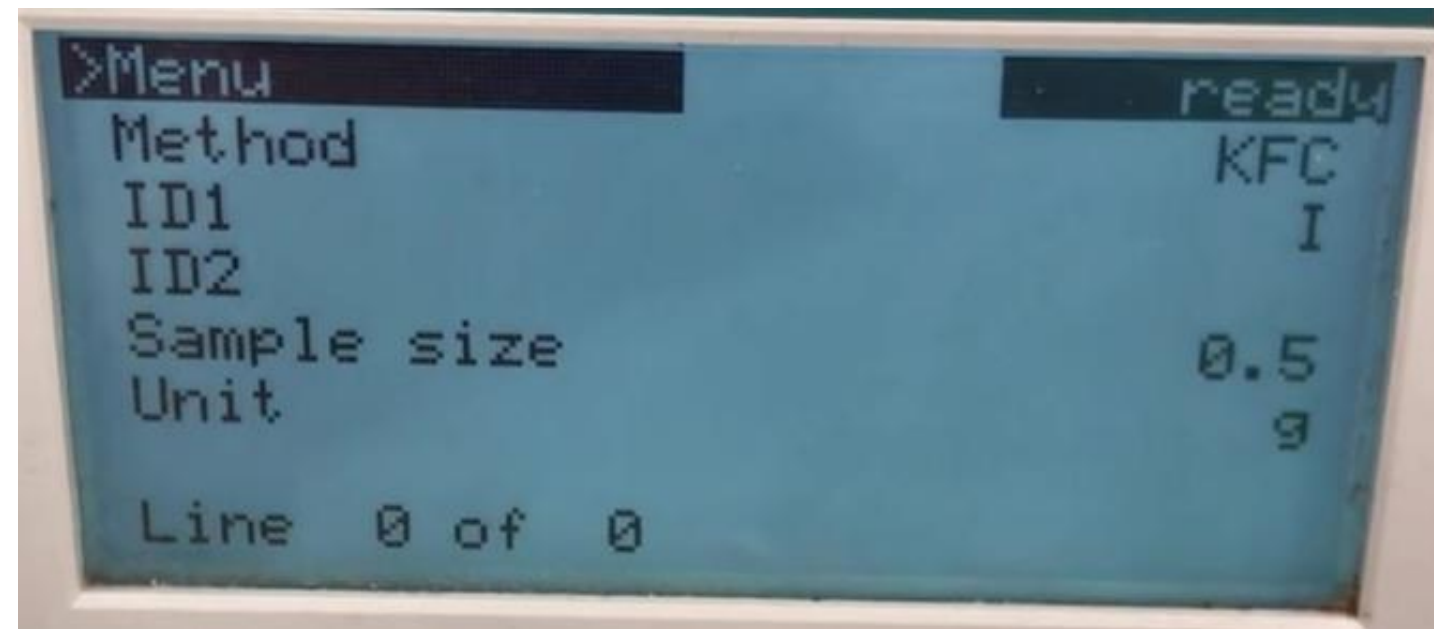
과제 주제

- 머신 러닝을 이용한 Character LCD 상의 문자영역 추출

02. 주제

주제

Text LCD 상의 Text영역 검출 및 Text 반전 영역 검출



03. 개발환경

개발 환경

1)개발 툴 : PyCharm 2021.1.2.

2) 개발 언어 : Python 3.8

3) 참고 소스 : <https://github.com/ultralytics/yolov5>

4) CUDA Version 11.2

cudnn : cudnn-11.2-windows-x64-v8.1.1.33

5) 필수 패키지

matplotlib>=3.2.2 numpy>=1.18.5 opencv-python>=4.1.2 Pillow PyYAML>=5.3.1 scipy>=1.4.1 torch>=1.7.0

torchvision>=0.8.1 tqdm>=4.41.0

tensorboard>=2.4.1

seaborn>=0.11.0

6) 라벨링 툴 : LabelImg

7)Yolo Version : YOLOv5

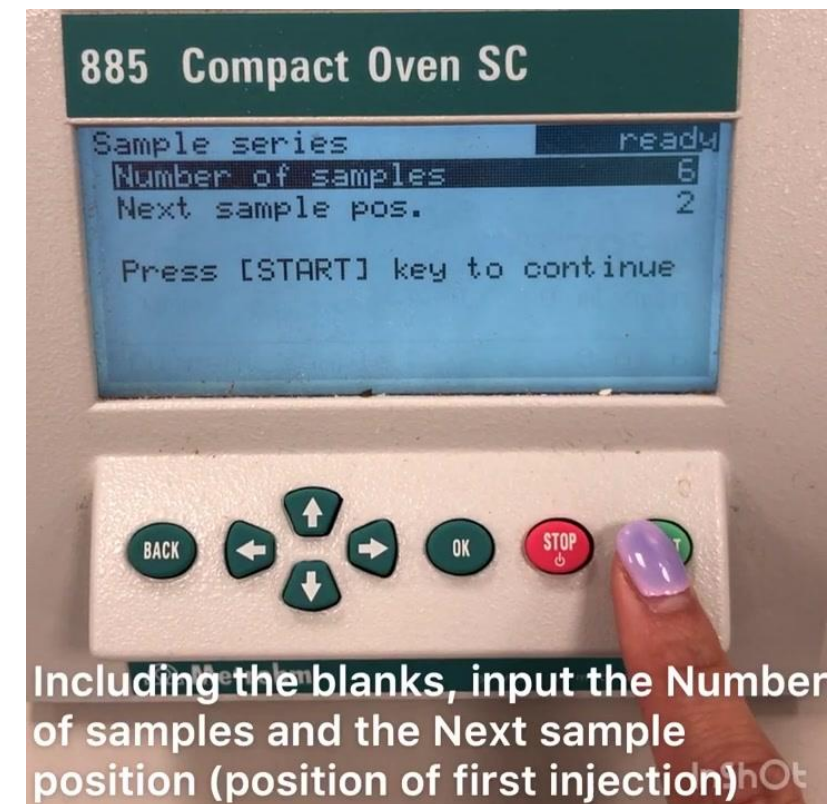
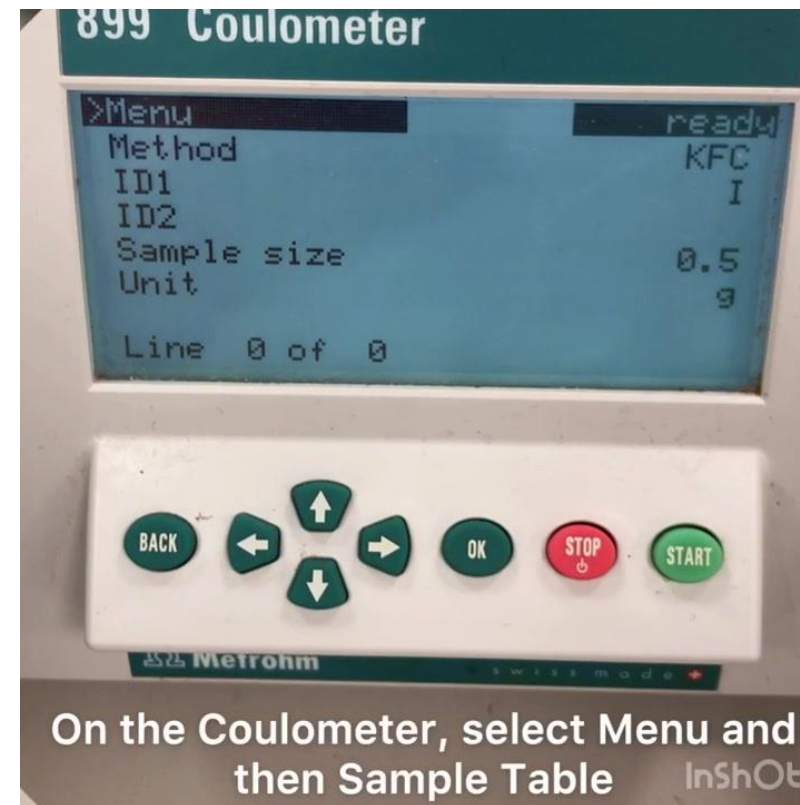
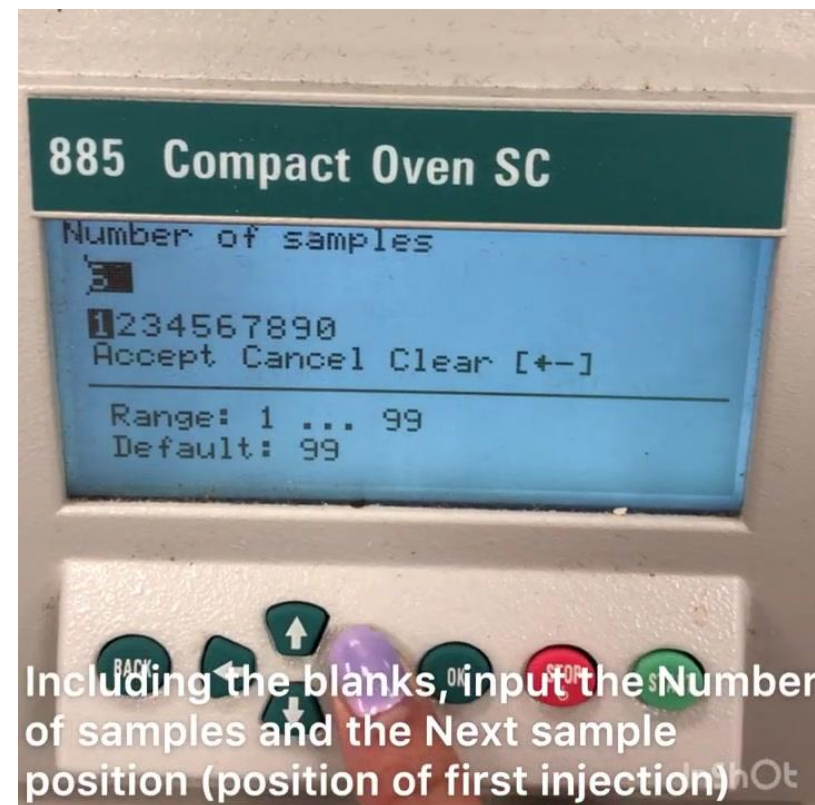
04. Data 학습

Data 학습

Train 영상 - 39개

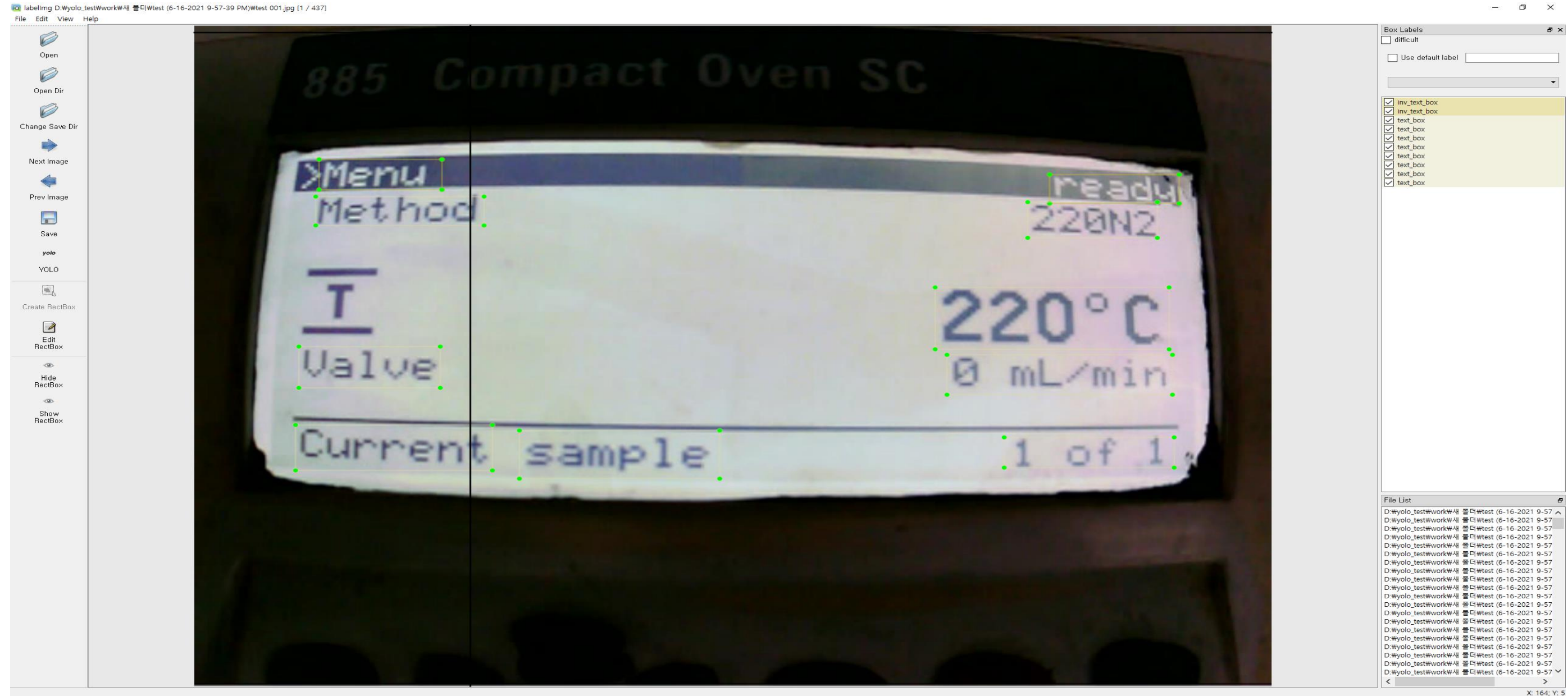
Validation 영상 - 7개

관련 영상 및 이미지는 유튜브에서 취득함



04. Data 학습

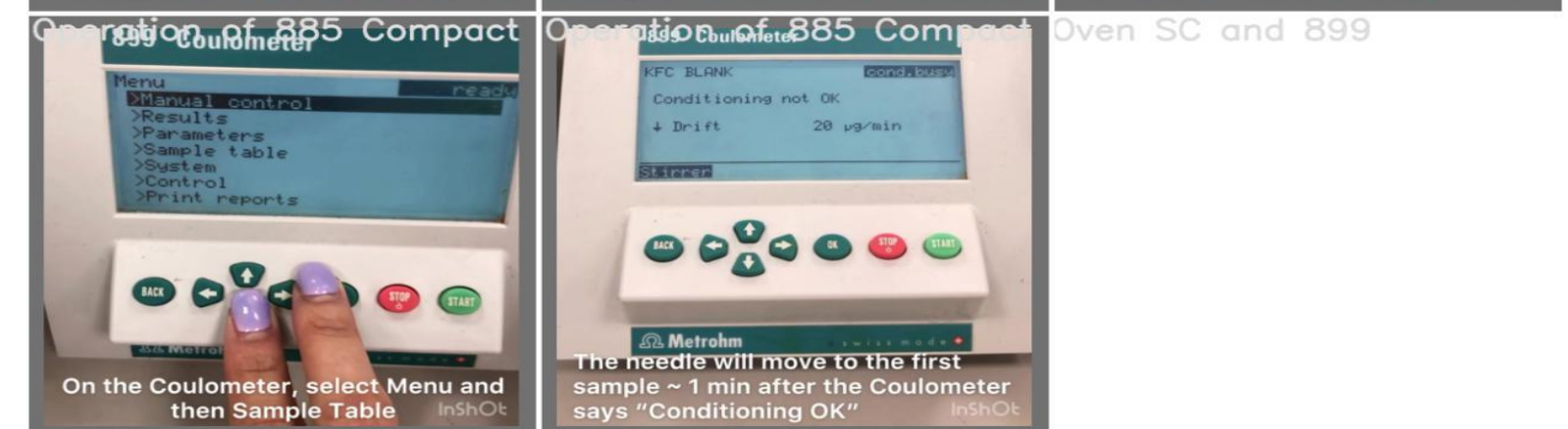
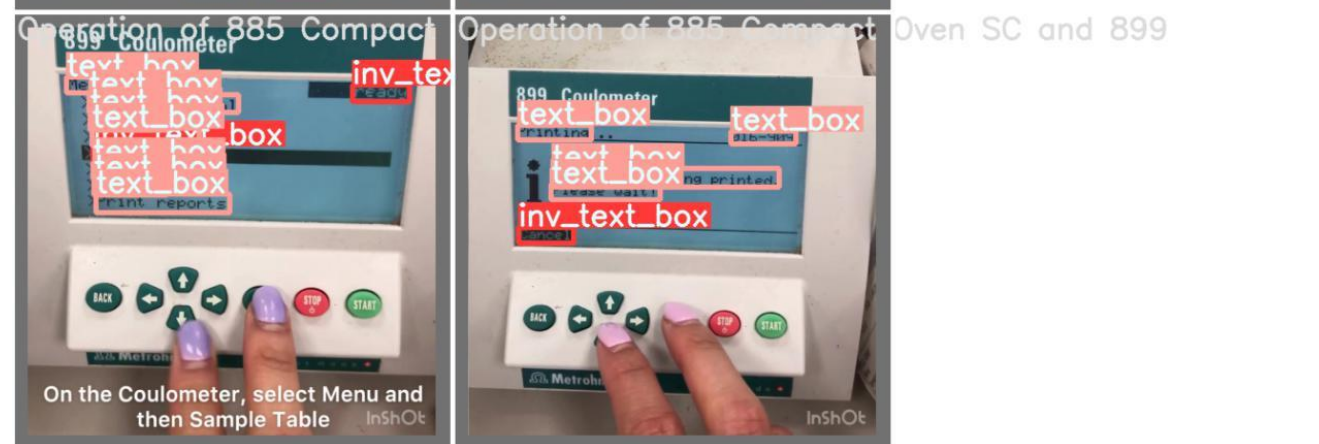
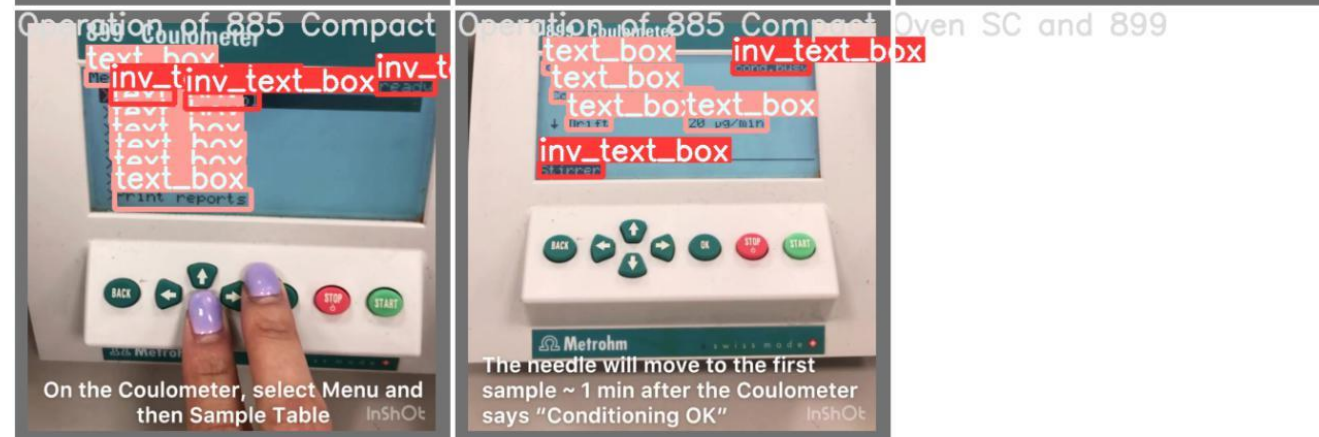
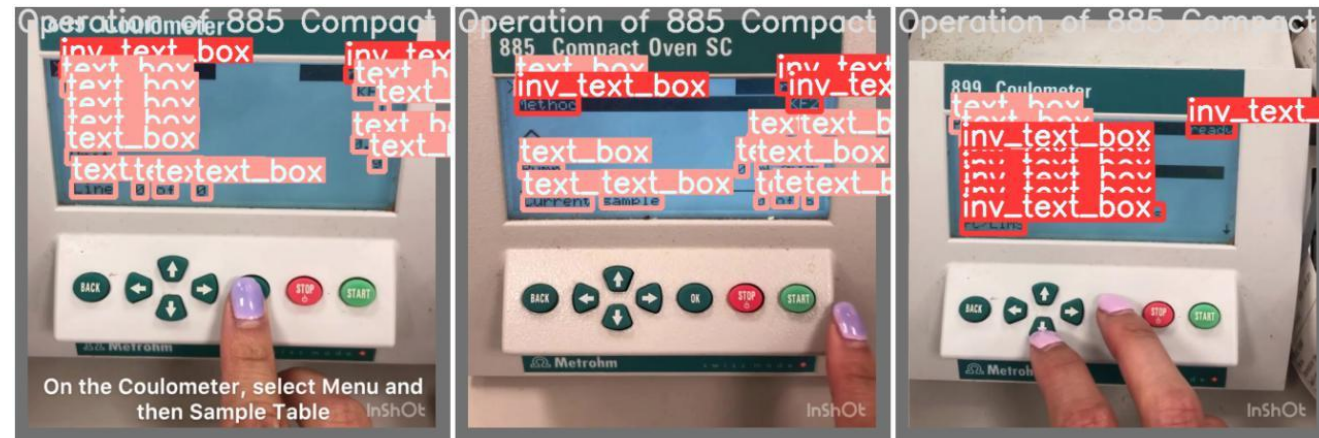
Data 학습



이미지에서 검출되어야 하는 영역에 대한 라벨링 실시(LabelImg 사용)

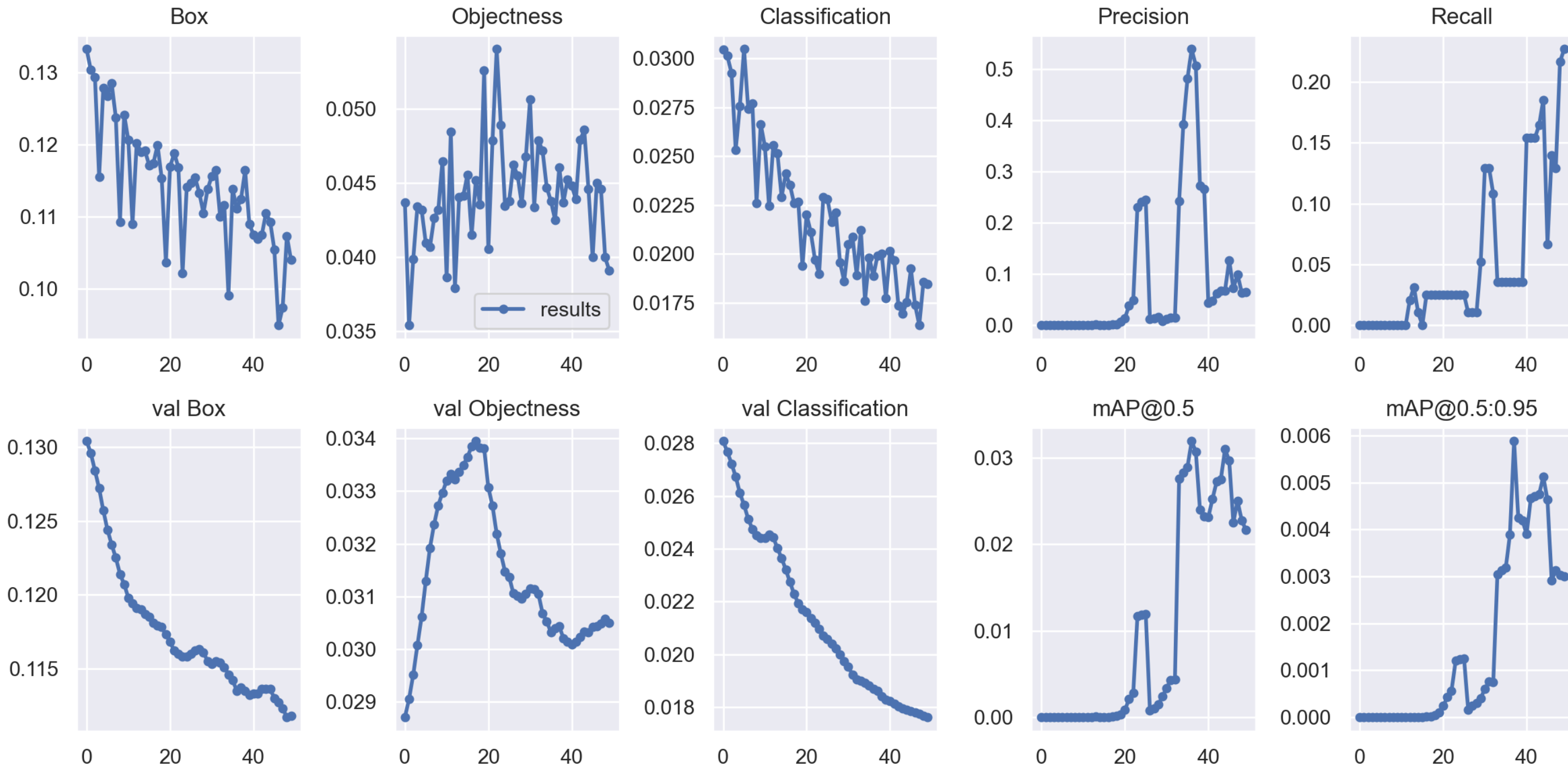
05. 결과

결과 - epoch : 50



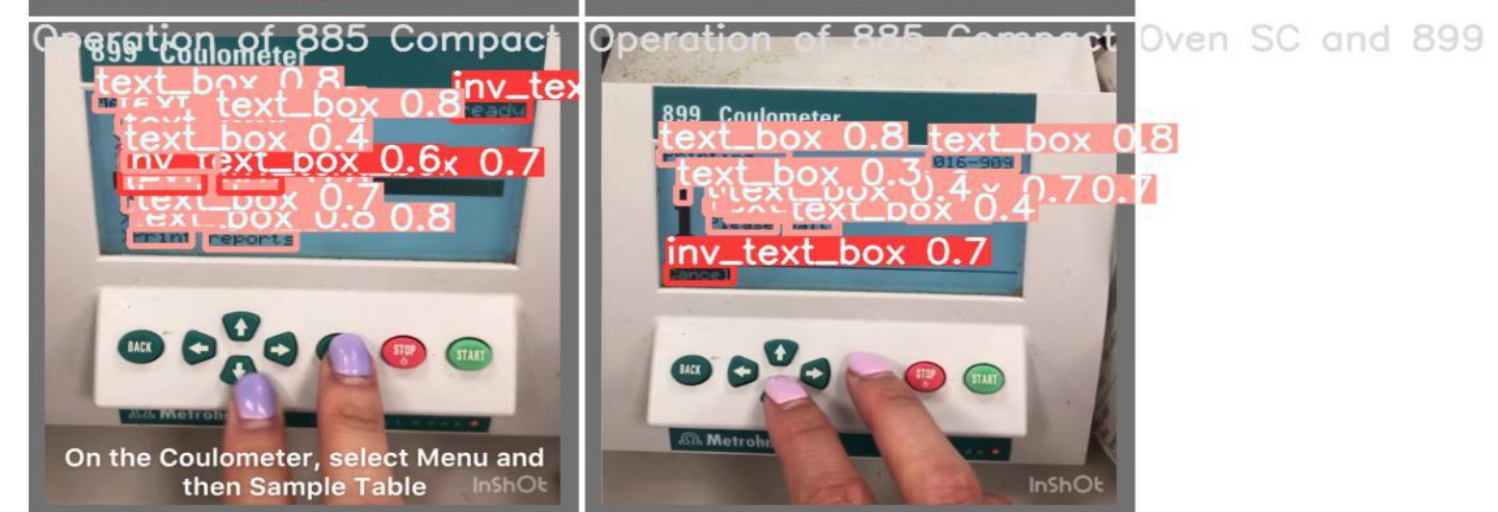
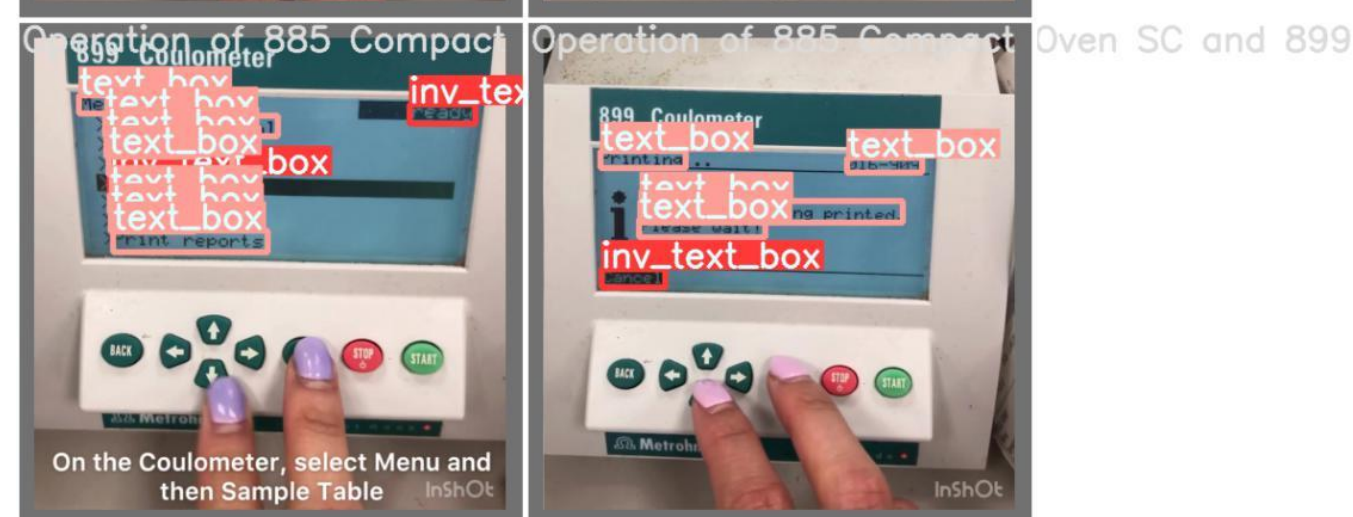
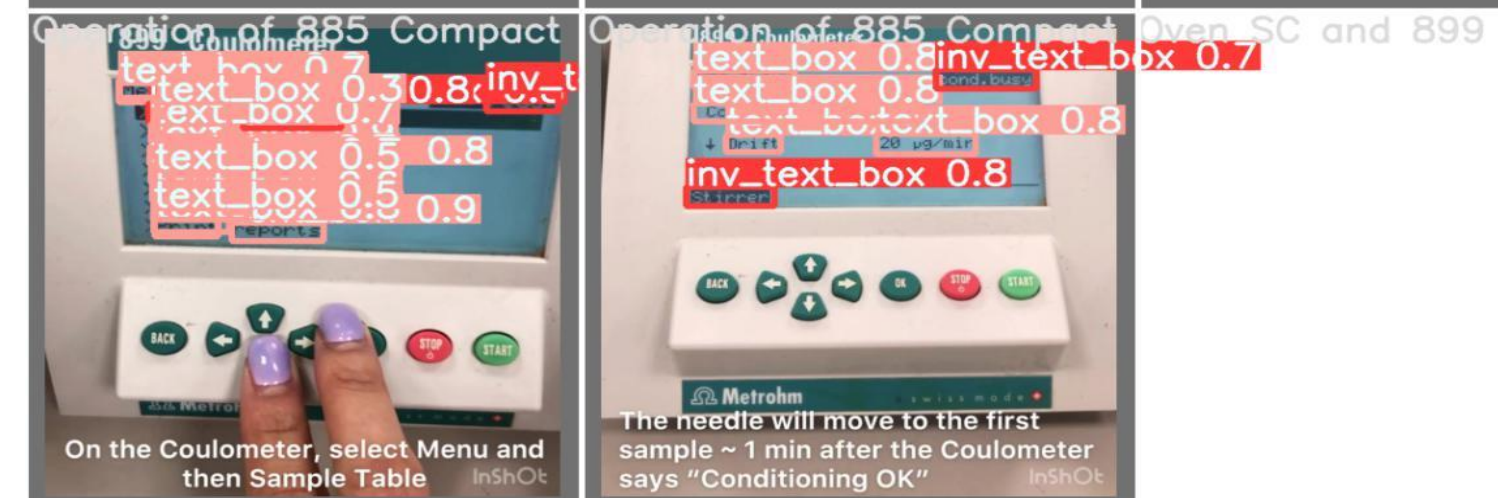
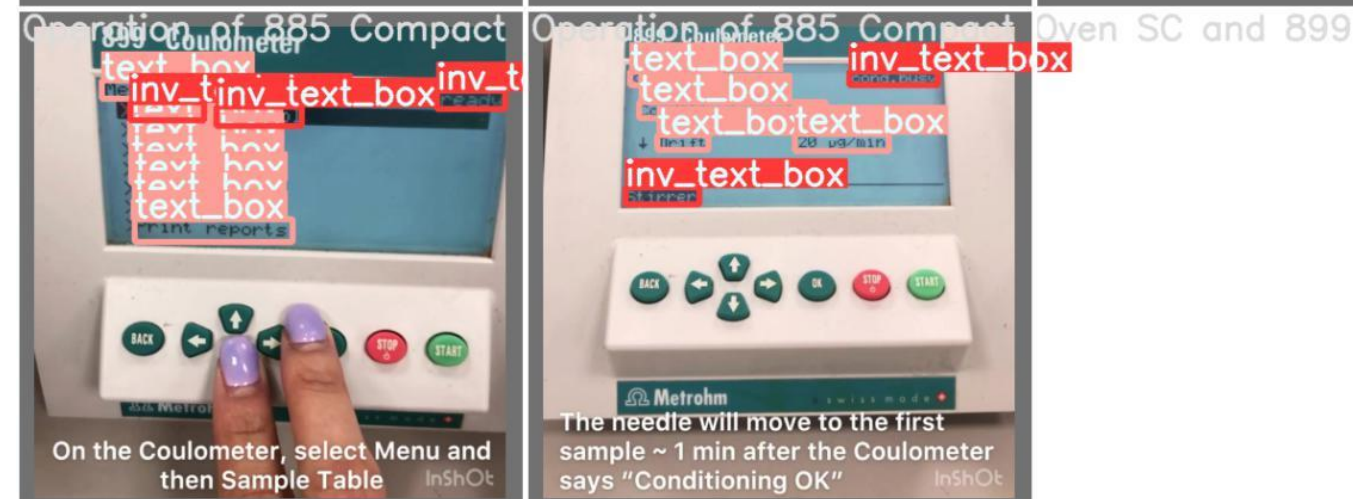
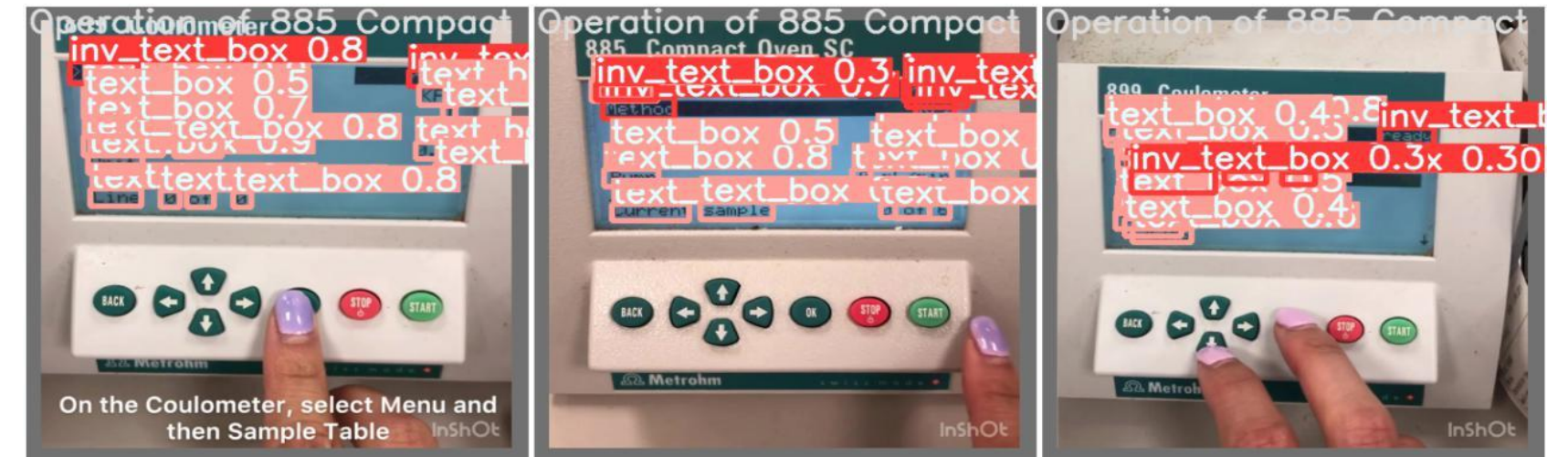
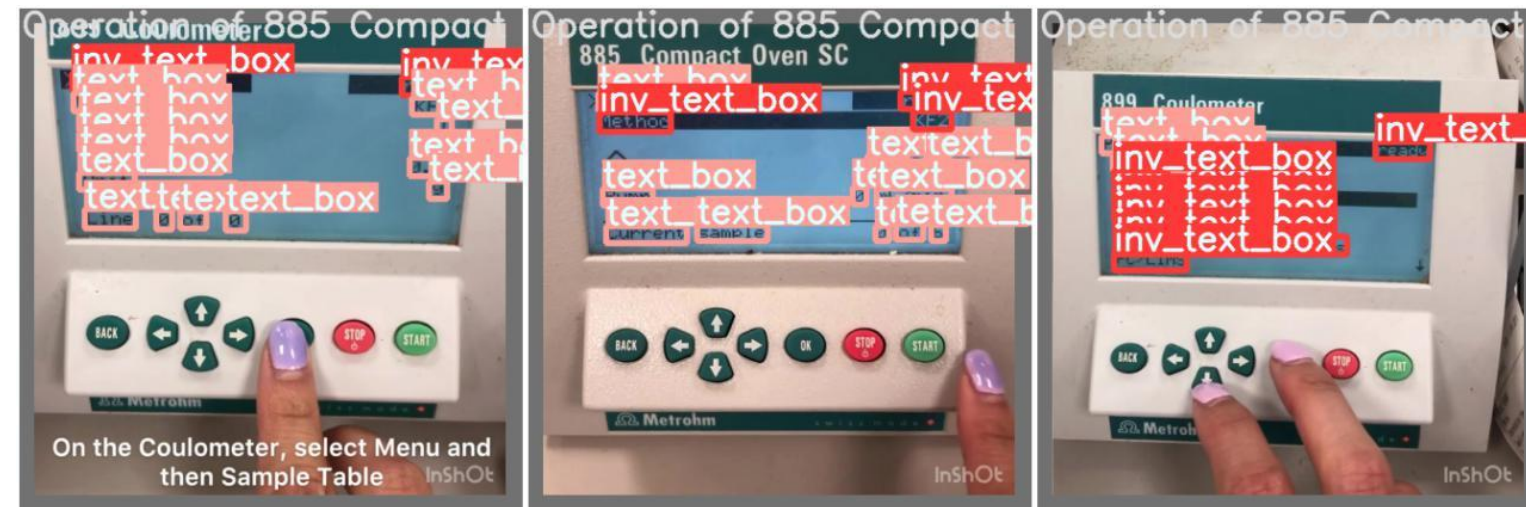
05. 결과

결과 - epoch : 50



05. 결과

결과 - epoch : 400



05. 결과

결과

