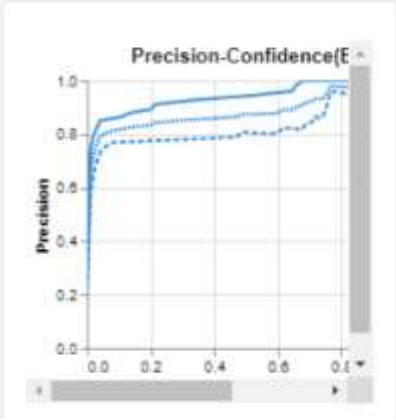
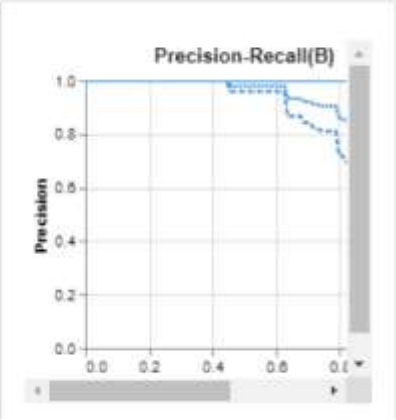
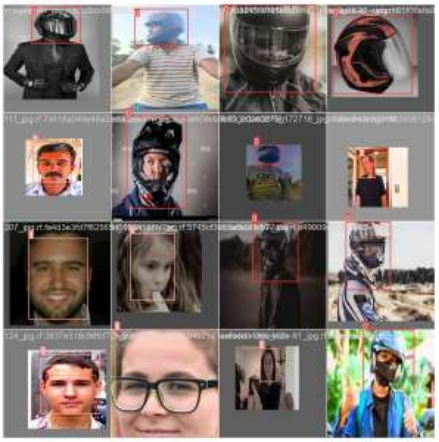

Precision-Confidence(B
Precision
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6

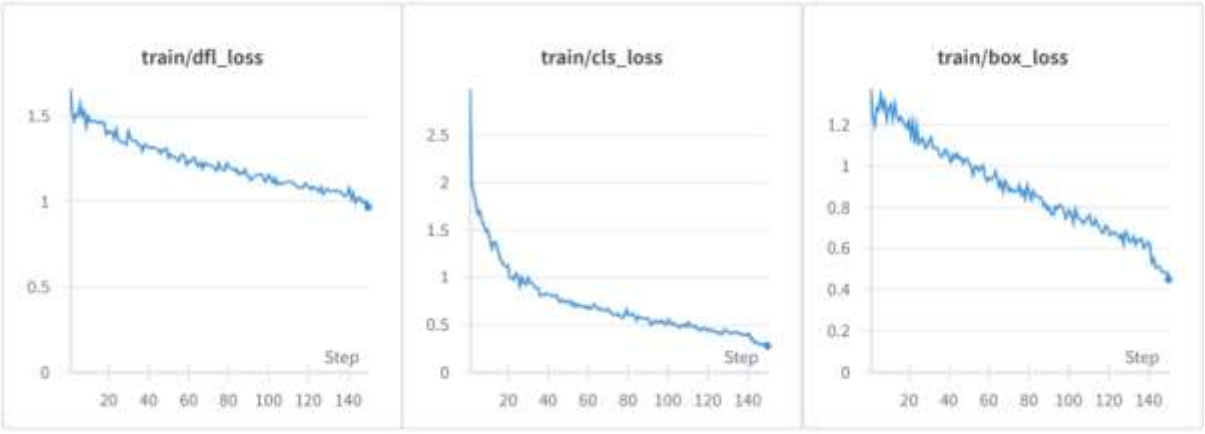

Recall-Confidence(B)
Recall
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6

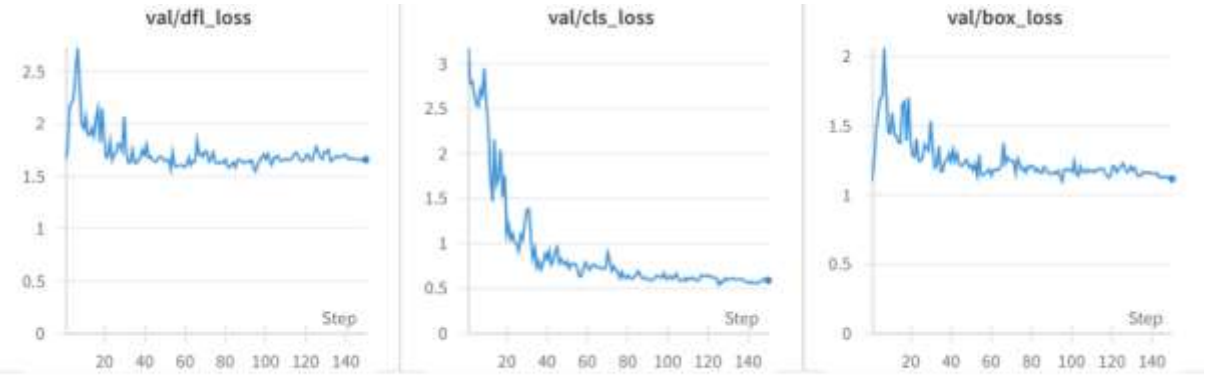

Precision-Recall(B)
Precision
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6

train_batch2662



train_batch2661





```
      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      1/100      2.67G      1.124      2.073      1.496         14        640: 100%|██████████| 35/35 [00:08<00:00,  4.20it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 2/2 [00:00<00:00,  3.59it/s]
                   all         52         52      0.833      0.808      0.861      0.552

      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      2/100      2.67G      1.116      1.394      1.442         11        640: 100%|██████████| 35/35 [00:06<00:00,  5.33it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 2/2 [00:00<00:00,  4.40it/s]
                   all         52         52      0.742      0.731      0.825      0.493

      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      3/100      2.66G      1.143      1.334      1.466          9        640: 100%|██████████| 35/35 [00:06<00:00,  5.49it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 2/2 [00:00<00:00,  3.78it/s]
                   all         52         52      0.728      0.519      0.702      0.427

      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      4/100      2.67G      1.145      1.188      1.445         10        640: 100%|██████████| 35/35 [00:06<00:00,  5.57it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 2/2 [00:00<00:00,  5.25it/s]
                   all         52         52      0.242      0.212      0.123     0.0225

      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      5/100      2.67G      1.123      1.118      1.429         11        640: 100%|██████████| 35/35 [00:06<00:00,  5.48it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 2/2 [00:00<00:00,  4.63it/s]
                   all         52         52      0.598      0.714      0.746      0.332

      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      6/100      2.67G      1.138       1.03      1.434         14        640: 100%|██████████| 35/35 [00:06<00:00,  5.54it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 2/2 [00:00<00:00,  5.07it/s]
                   all         52         52      0.519      0.623      0.599      0.352

      Epoch    GPU_mem   box_loss   cls_loss   dfl_loss  Instances       Size
      7/100      2.67G      1.095     0.9768      1.425         10        640: 100%|██████████| 35/35 [00:06<00:00,  5.71it/s]
                 Class     Images  Instances      Box(P          R      mAP50  mAP50-95): 100%|██████████| 2/2 [00:00<00:00,  5.22it/s]
                   all         52         52      0.788      0.942      0.923      0.598
```

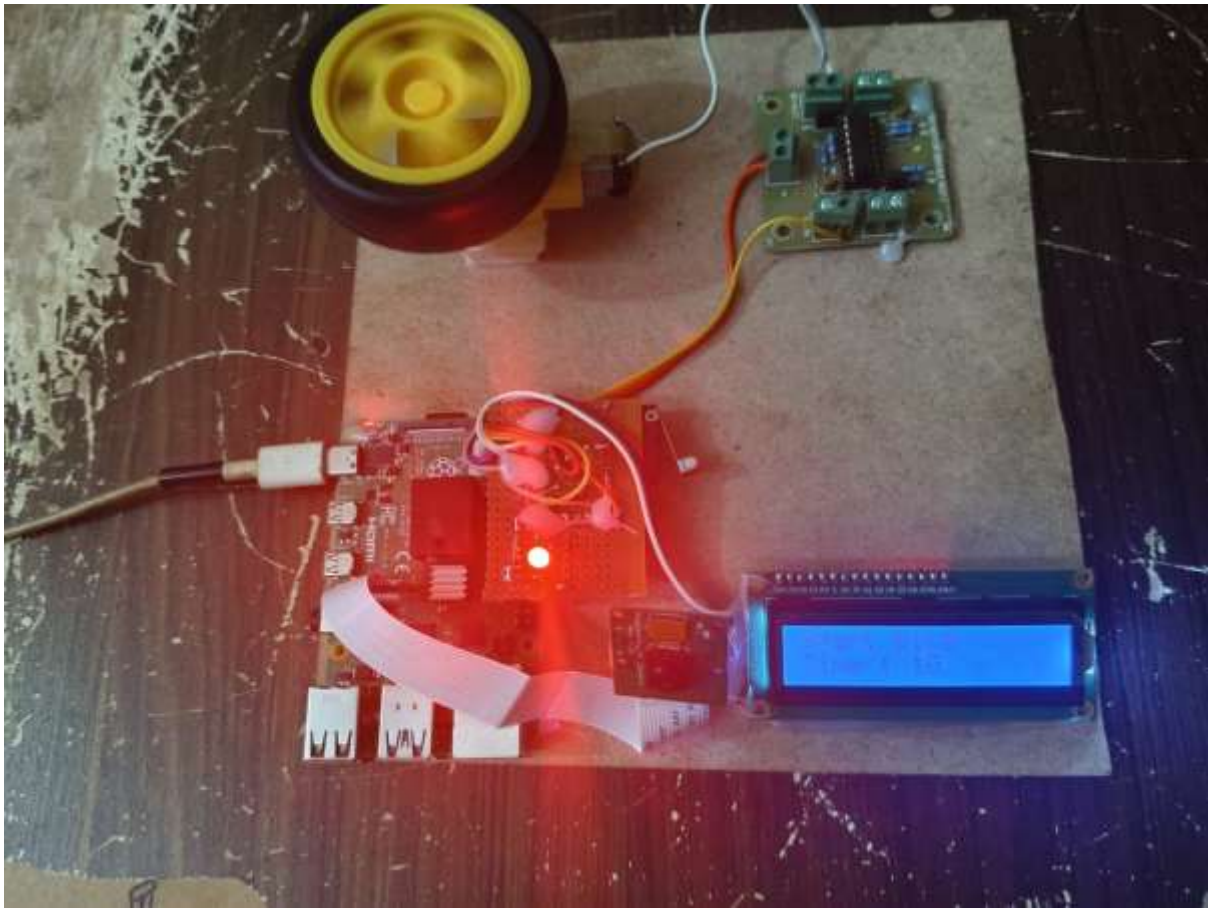
```python
from ultralytics import YOLO

# Define the training arguments
model = "yolov8l.pt"
data = "/kaggle/input/own-dataset/data.yaml"
epochs = 100
imgsz = 640

# Create the YOLO object
yolo = YOLO()

# Train the model with desired arguments (excluding wandb)
yolo.train(
    task="detect",
    mode="train",
    model=model,
    data=data,
    epochs=epochs,
    imgsz=imgsz,
)
```

```
Ultralytics YOLOv8.1.37 🚀 Python-3.10.13 torch-2.1.2 CUDA:0 (Tesla T4, 15102MiB)
```

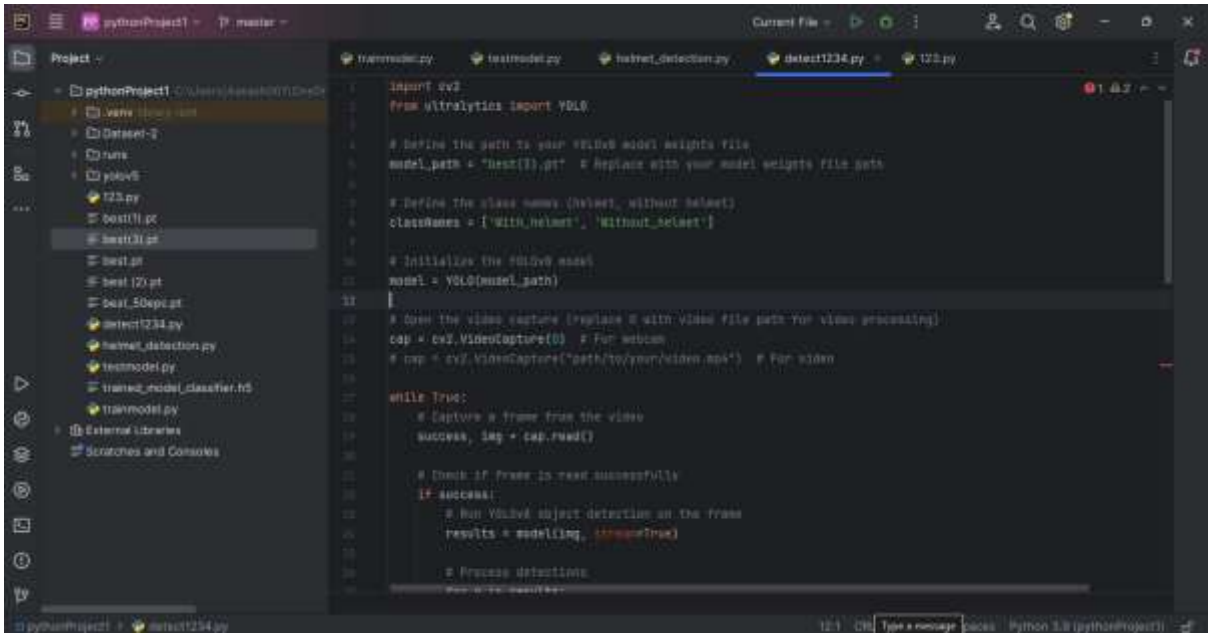
[1]:

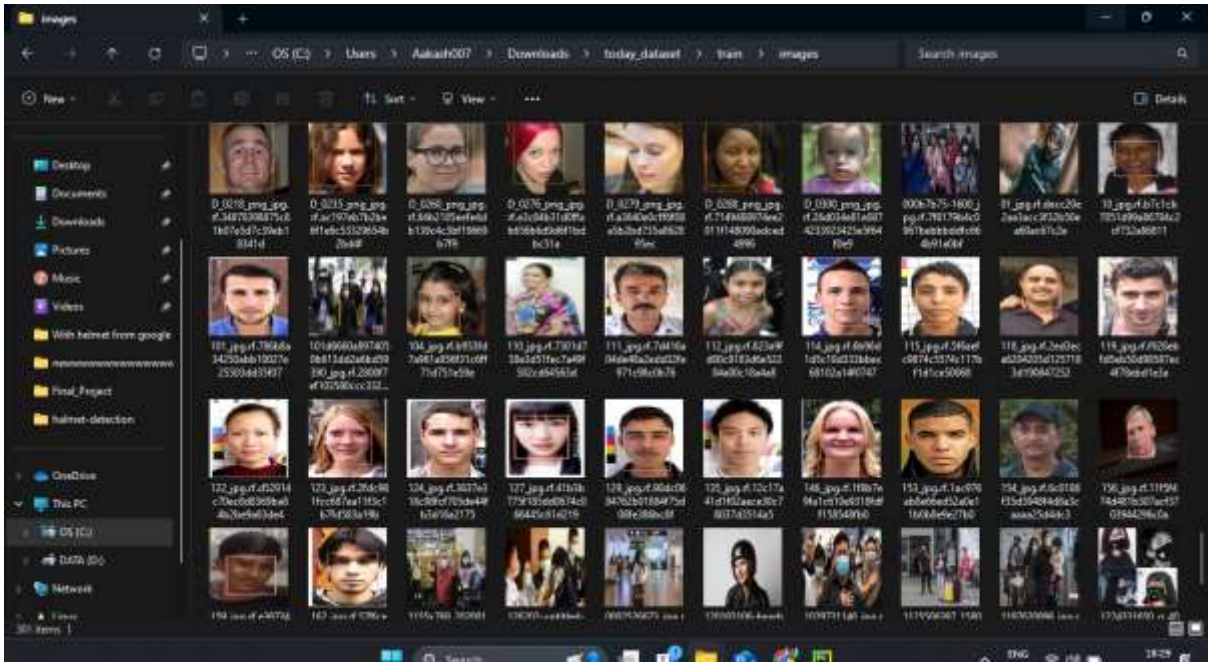
```
pip install ultralytics
```

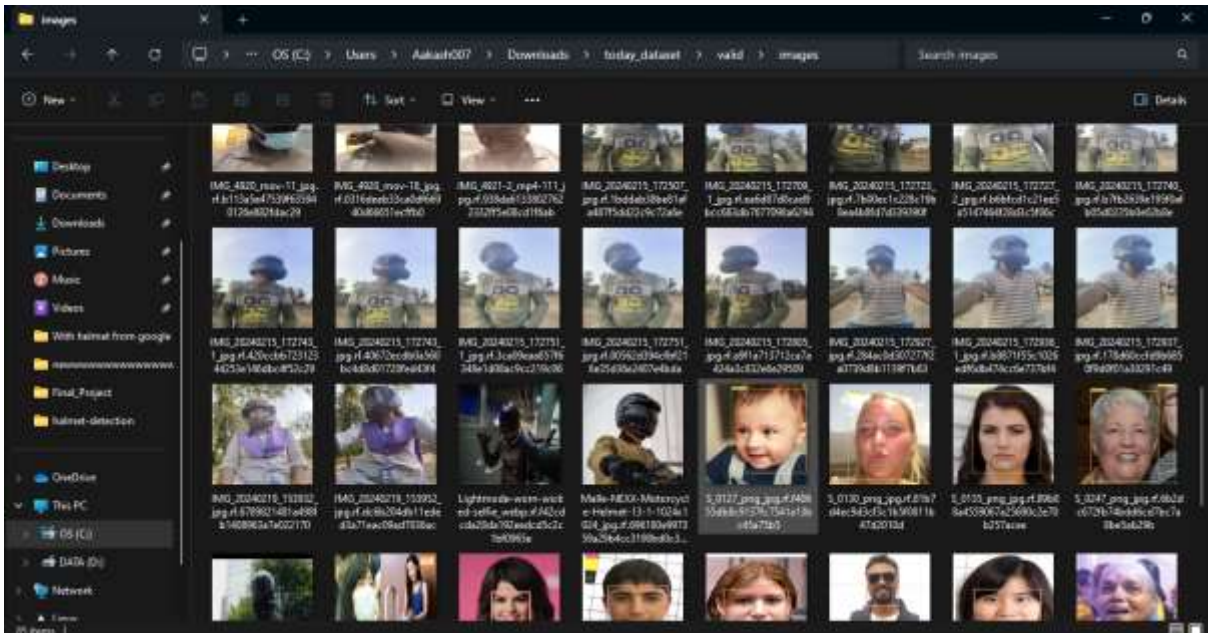
```
Collecting ultralytics
  Downloading ultralytics-8.1.37-py3-none-any.whl.metadata (40 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 40.3/40.3 kB 690.2 kB/s eta 0:00:00a 0:00:01
Requirement already satisfied: matplotlib>=3.3.0 in /opt/conda/lib/python3.10/site-package
s (from ultralytics) (3.7.5)
Requirement already satisfied: opencv-python>=4.6.0 in /opt/conda/lib/python3.10/site-pack
ages (from ultralytics) (4.9.0.80)
Requirement already satisfied: pillow>=7.1.2 in /opt/conda/lib/python3.10/site-packages (f
rom ultralytics) (9.5.0)
Requirement already satisfied: pyyaml>=5.3.1 in /opt/conda/lib/python3.10/site-packages (f
rom ultralytics) (6.0.1)
Requirement already satisfied: requests>=2.23.0 in /opt/conda/lib/python3.10/site-packages
(from ultralytics) (2.31.0)
Requirement already satisfied: scipy>=1.4.1 in /opt/conda/lib/python3.10/site-packages (fr
om ultralytics) (1.11.4)
Requirement already satisfied: torch>=1.8.0 in /opt/conda/lib/python3.10/site-packages (fr
om ultralytics) (2.1.2)
Requirement already satisfied: torchvision>=0.9.0 in /opt/conda/lib/python3.10/site-packag
es (from ultralytics) (0.16.2)
Requirement already satisfied: tqdm>=4.64.0 in /opt/conda/lib/python3.10/site-packages (fr
om ultralytics) (4.66.1)
Requirement already satisfied: psutil in /opt/conda/lib/python3.10/site-packages (from ult
ralytics) (5.9.3)
Requirement already satisfied: py-cpuinfo in /opt/conda/lib/python3.10/site-packages (from
ultralytics) (9.0.0)
Collecting thop>=0.1.1 (from ultralytics)
  Downloading thop-0.1.1.post2209072238-py3-none-any.whl.metadata (2.7 kB)
```



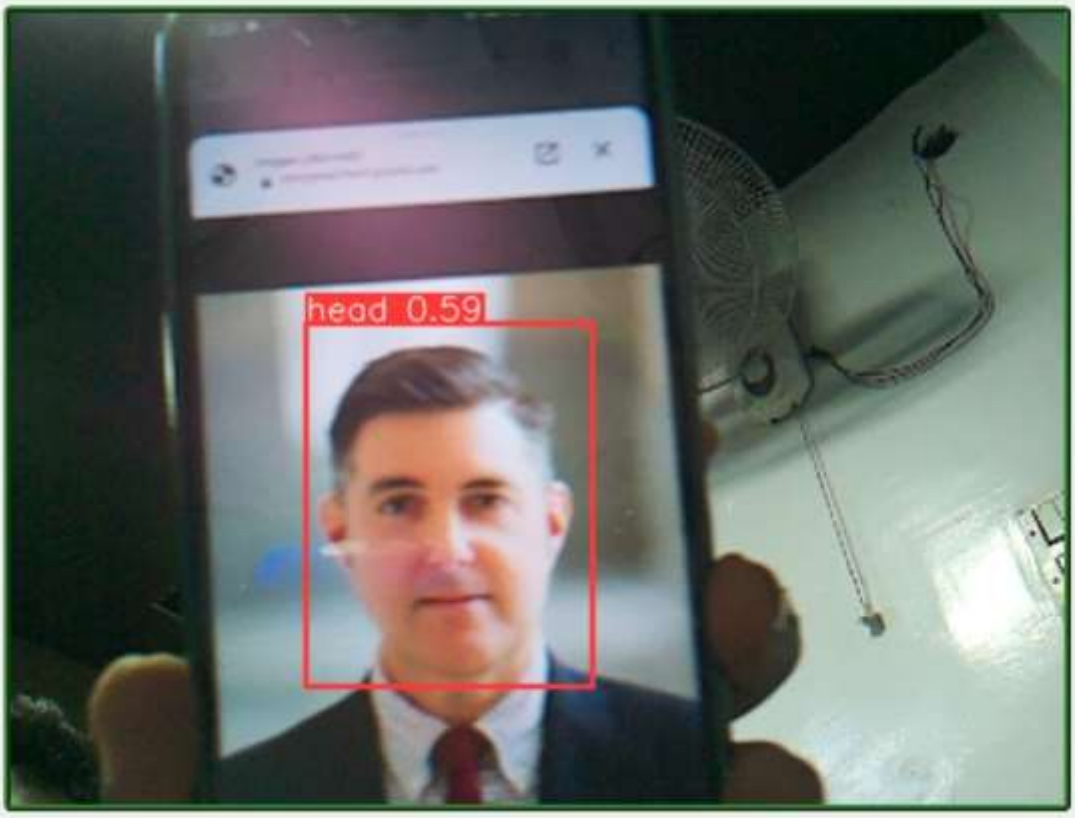

Smart Bike
192.168.164.56

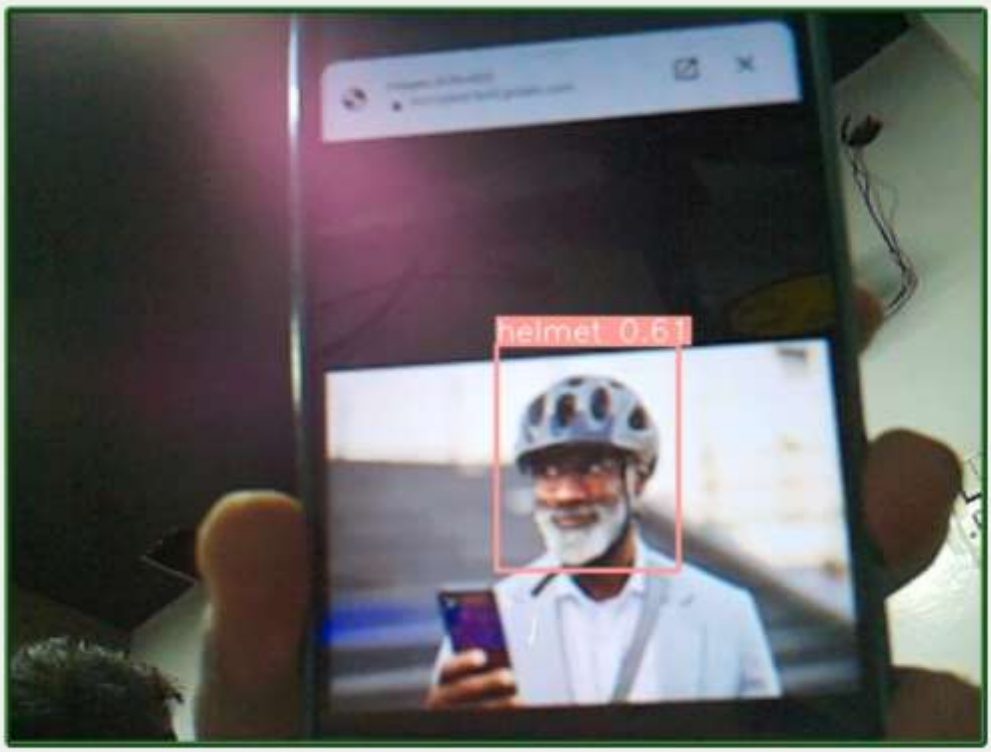

pythonProject1
master
Current File
Project
trainmodel.py
testmodel.py
helmet_detection.py
detect1234.py
123.py
pythonProject1
Dataset-2
runs
yolov5
123.py
best(1).pt
best(3).pt
best.pt
best (2).pt
best_50epc.pt
detect1234.py
helmet_detection.py
testmodel.py
trained_model_classifier.h5
trainmodel.py
External Libraries
Scratches and Consoles
import cv2
from ultralytics import YOLO
# Define the path to your YOLOv8 model weights file
model_path = "best(3).pt" # Replace with your model weights file path
# Define the class names (helmet, without helmet)
classNames = ['With_helmet', 'Without_helmet']
# Initialize the YOLOv8 model
model = YOLO(model_path)
# Open the video capture (replace 0 with video file path for video processing)
cap = cv2.VideoCapture(0) # For webcam
# cap = cv2.VideoCapture("path/to/your/video.mp4") # For video
while True:
# Capture a frame from the video
success, img = cap.read()
# Check if frame is read successfully
if success:
# Run YOLOv8 object detection on the frame
results = model(img, stream=True)
# Process detections


images
OS (C:) › Users › Aakash007 › Downloads › today_dataset › train › images
Search images
New
Sort
View
Details
Desktop
Documents
Downloads
Pictures
Music
Videos
With helmet from google
Final_Project
helmet-detection
OneDrive
This PC
OS (C:)
DATA (D:)
Network

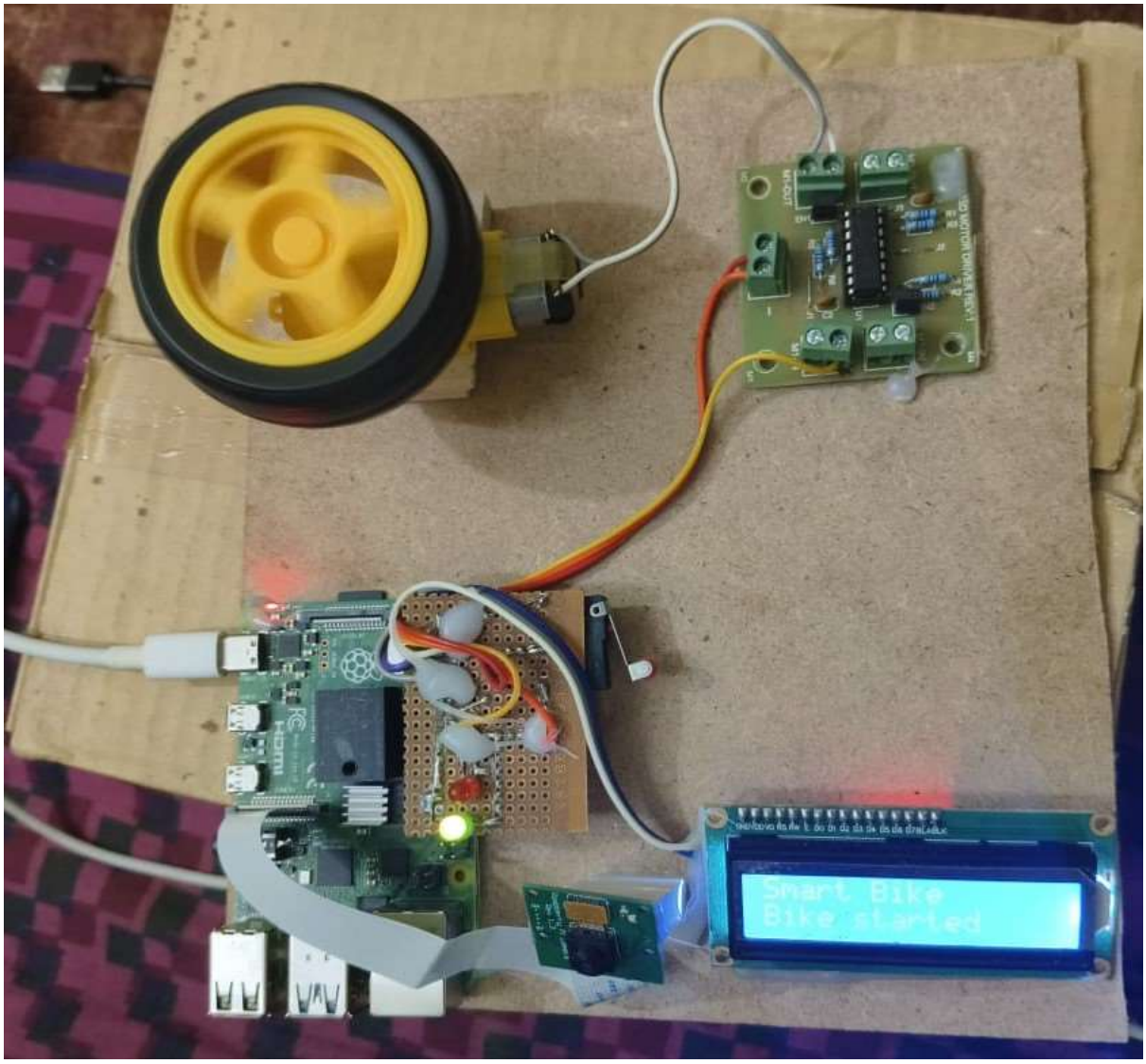

images
OS (C:) › Users › Aakash007 › Downloads › today_dataset › valid › images
Search images
New
Sort
View
Details
Desktop
Documents
Downloads
Pictures
Music
Videos
With helmet from google
Final_Project
helmet-detection
OneDrive
This PC
OS (C:)
DATA (D:)
Network

Smart Helmet Detection






Smart Bike
Time: 7


Smart Bike
Bike started