CLI use

Note: The environment has been set up. Simply follow the instructions to run the corresponding function commands to use it.

1. Download the Source Code

⚠ If you are using the Docker container in the factory image, you do not need to download this step and can skip it.

```
git clone https://github.com/ultralytics/ultralytics.git
```

2. Using the CLI for Prediction

A command-line interface (CLI) is a way for users to interact with a computer or software program by typing text commands to run a program or perform tasks, rather than clicking icons or buttons through a graphical user interface (GUI).

2.1. CLI Syntax

```
yolo TASK MODE ARGS

Where   TASK (optional) is one of [detect, segment, classify, pose, obb]
        MODE (required) is one of [train, val, predict, export, track,
benchmark]
        ARGS (optional) are any number of custom 'arg=value' pairs like
'imgsz=320' that override defaults.
```

2.2 Image Prediction

Use yolo11n.pt to predict images included with the Ultralytics project. If the system doesn't find the corresponding model file in the directory where you run the command, it will automatically download it. (If the download fails, you can copy the model file into the directory.)

Go to the project folder:

```
cd ~/ultralytics/ultralytics
```

Use yolo11n.pt to detect images in the target folder and output the results:

```
# The image path can be customized to your own image.
yolo predict model=yolo11n
source='/home/sunrise/ultralytics/ultralytics/assets/bus.jpg'
```

```
sunrise@ubuntu:~$ cd ultralytics/ultralytics/
sunrise@ubuntu:~/ultralytics/ultralytics$ yolo predict model=yolo11n source='/ho
me/sunrise/ultralytics/ultralytics/assets/bus.jpg'
Ultralytics 8.3.193 Python-3.10.12 torch-2.8.0+cpu CPU (Cortex-A55)
YOLO11n summary (fused): 100 layers, 2,616,248 parameters, 0 gradients, 6.5 GFLO
Ps

image 1/1 /home/sunrise/ultralytics/ultralytics/assets/bus.jpg: 640x480 4 person
s, 1 bus, 1709.1ms
Speed: 60.2ms preprocess, 1709.1ms inference, 9.2ms postprocess per image at sha
pe (1, 3, 640, 480)
Results saved to /home/sunrise/ultralytics/ultralytics/runs/detect/predict3
Learn more at https://docs.ultralytics.com/modes/predict
```

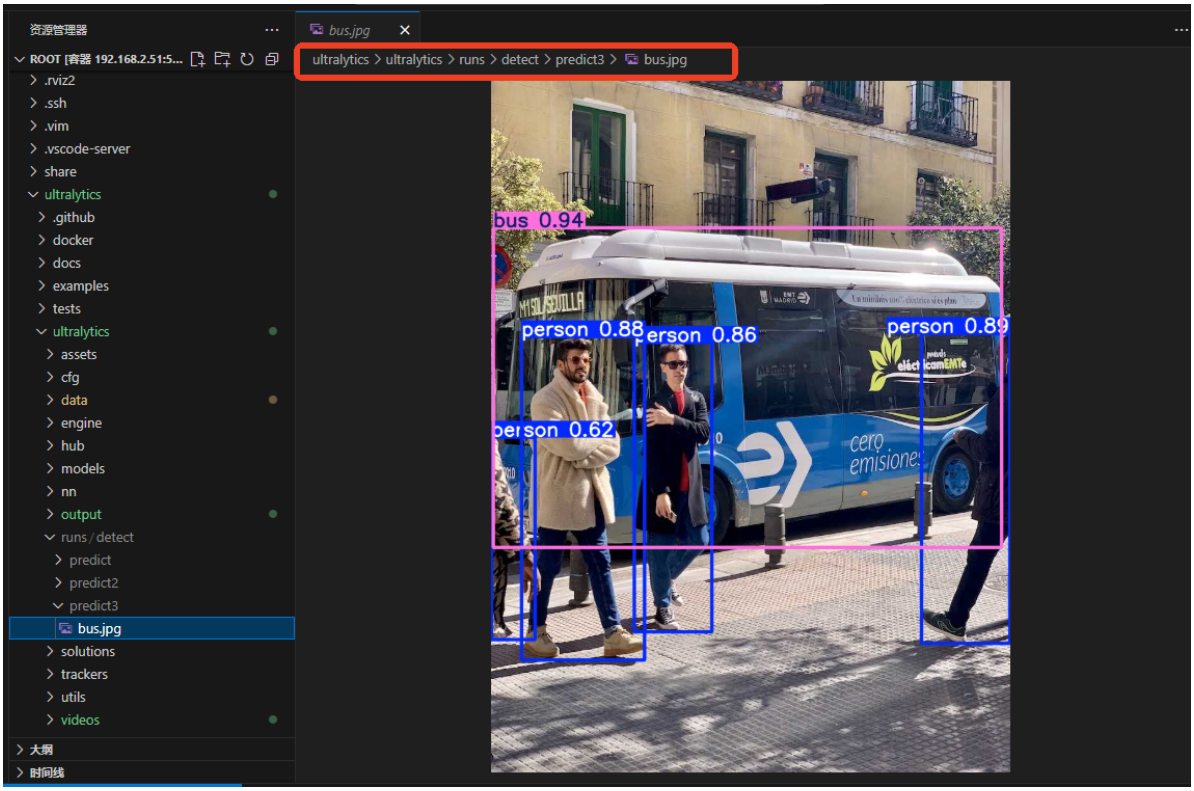
If the image above appears, the prediction is successful.

Preview

Yolo recognizes the output video location.

```
/home/sunrise/ultralytics/ultralytics/runs/detect
```

With each run, the predict value in this folder automatically increments by 1.



2.3 Video Prediction

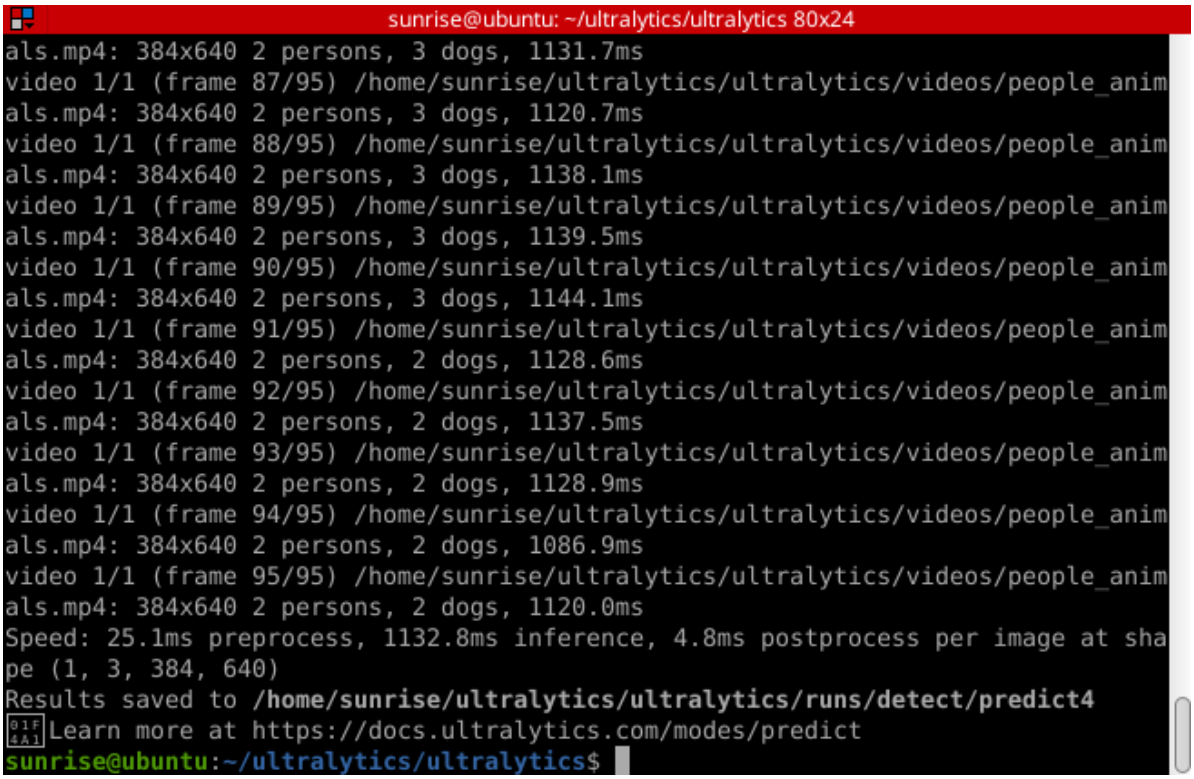
Use yolo11n.pt to predict videos in the Ultralytics project (not included with Ultralytics): If the system doesn't find the corresponding model file in the directory where you run the command, it will automatically download it. (If it can't download, you can copy the model into the directory.)

Go to the project folder:

```
cd ~/ultralytics/ultralytics
```

Use yolo11n.pt to detect videos in the target folder and output the results:

```
# The video path can be customized.
yolo predict model=yolo11n
source='/home/sunrise/ultralytics/ultralytics/videos/people_animals.mp4'
```



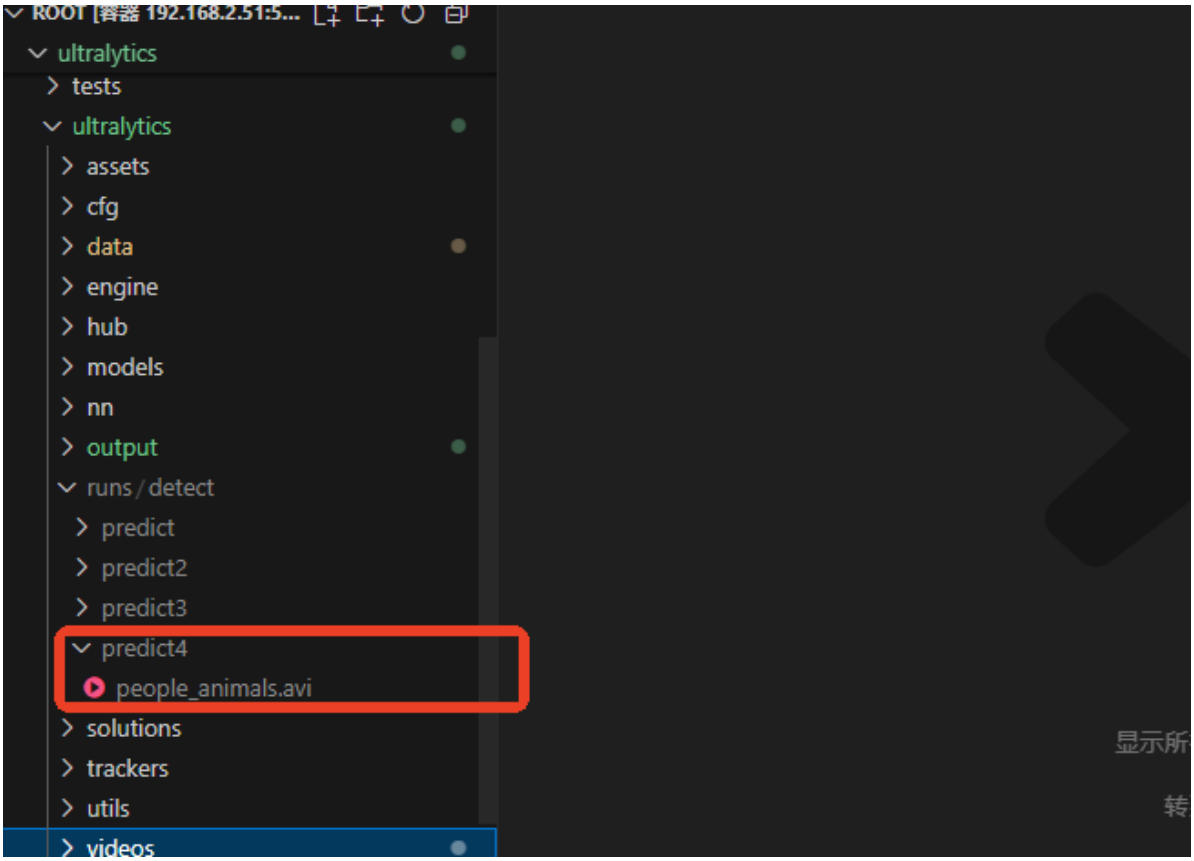
The above image indicates a successful prediction.

Preview

Yolo recognizes the output video location.

```
/home/sunrise/ultralytics/ultralytics/runs/detect
```

The prediction value in this folder automatically increments by 1 with each run.

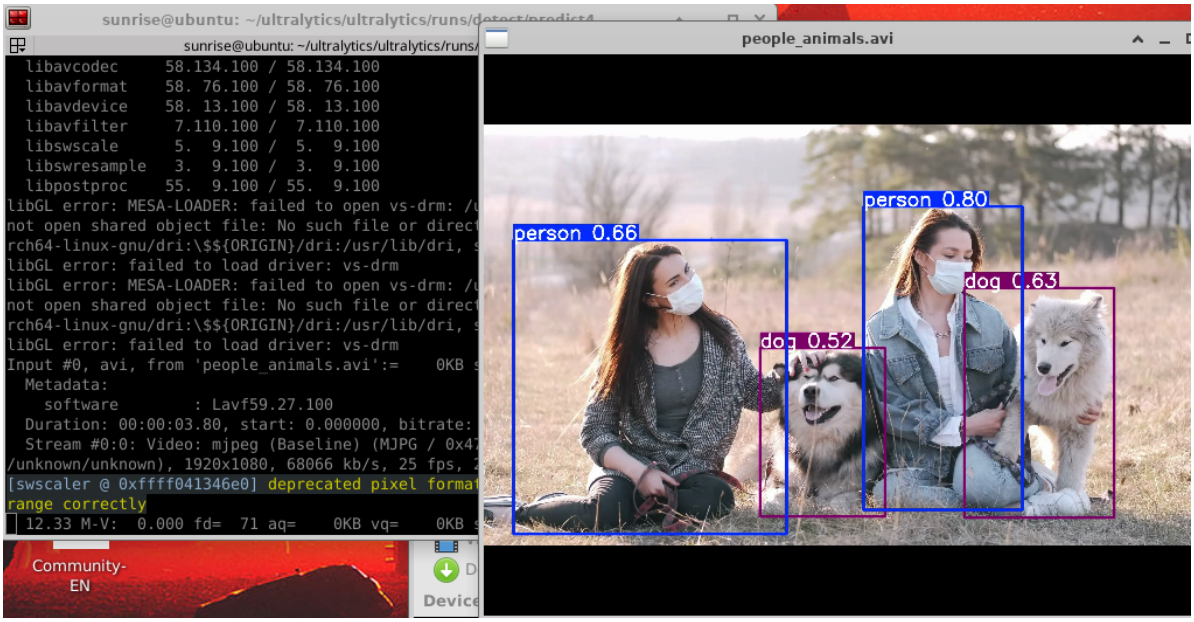


You can use ffmpeg to view the video. Install it using the following command:

```
sudo apt update
sudo apt install ffmpeg -y
```

Play the video:

```
ffplay -x 640 -y 480 <video_name>.avi
```



2.4. Real-time Prediction

⚠This feature only supports USB cameras; depth cameras are not supported by the CLI.

Use yolo11n.pt to predict the USB camera image. If the system does not find the corresponding model file in the directory where the command is run, it will automatically download it.

Go to the project folder:

```
cd ~/ultralytics/ultralytics
```

Use yolo11n.pt to detect the camera image and output the results.

```
yolo predict model=yolo11n.pt source=0 save=False show # Object Detection
# Instance Segmentation: yolo predict model=yolo11n-seg.pt source=0 save=False
show
# Image Classification: yolo predict model=yolo11n-cls.pt source=0 save=False
show
# Pose Estimation: yolo predict model=yolo11n-pose.pt source=0 save=False show
# Oriented Object Detection: yolo predict model=yolo11n-obb.pt source=0
save=False show
```

Click the terminal and press the "Ctrl + C" shortcut to terminate the program!

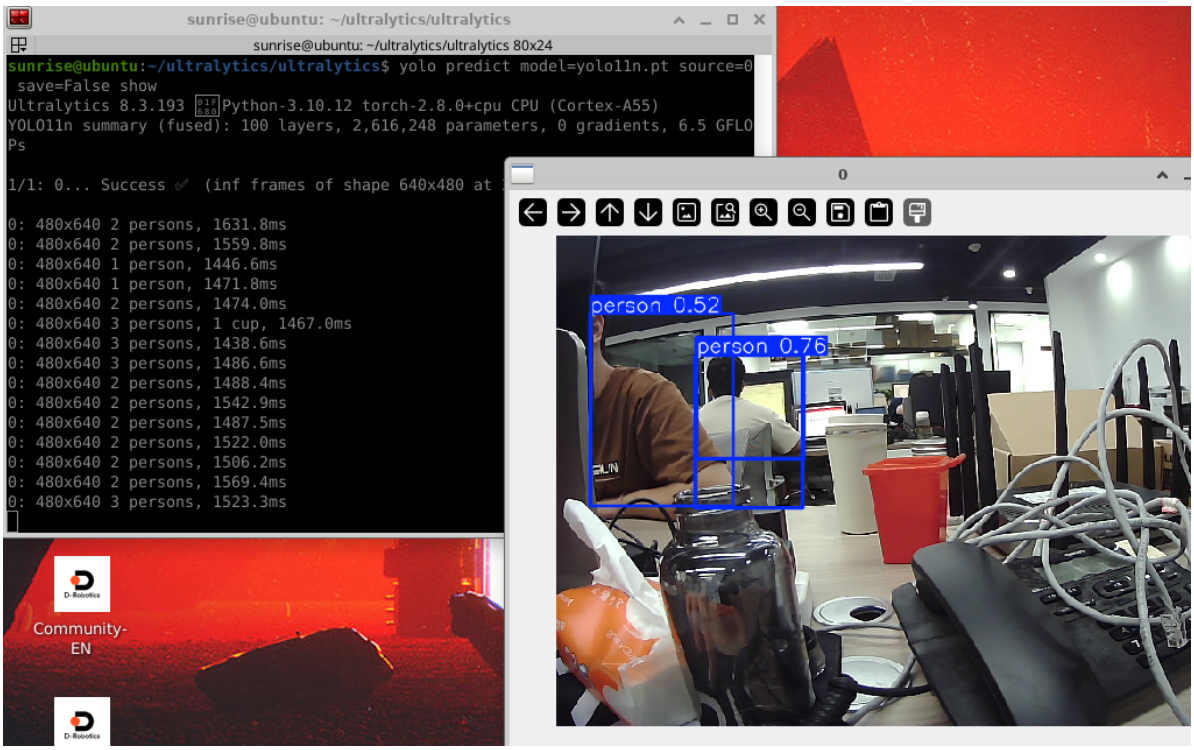
> **Parameter Description**

`model`: Specifies the YOLO model

`source`: Specifies the recognition source (multiple cameras can switch between digital ones)

`save=False`: Disables saving results

`show`: Displays results in real time



References

https://github.com/ultralytics/ultralytics

https://docs.ultralytics.com/usage/cli/