

CLI use

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References

1. Download source code

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

2. Enable optimal performance of the motherboard

2.1. Enable MAX Power Mode

Enabling MAX Power Mode on Jetson will ensure that all CPU and GPU cores are turned on:

```
sudo nvpmode1 -m 2
```

2.2. Enable Jetson Clocks

Enabling Jetson Clocks will ensure that all CPU and GPU cores run at maximum frequency:

```
sudo jetson_clocks
```

3. Use CLI prediction

CLI (Command-Line Interface) is a way for users to interact with computers or software programs. Users run programs or perform tasks by typing text commands instead of clicking icons or buttons through a graphical user interface (GUI).

3.1. CLI usage 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.

3.2. Image prediction

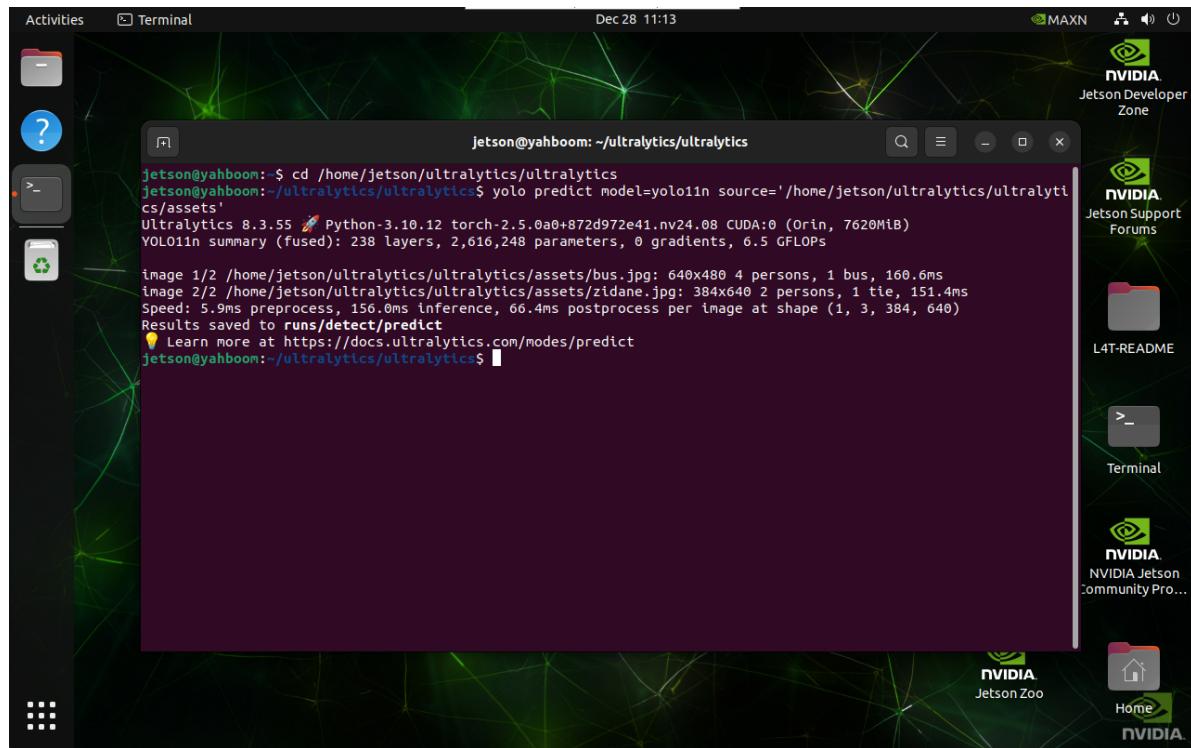
Use yolo11n.pt to predict the built-in images in the ultralytics project: If the system does not find the corresponding model file in the directory where the command is run, it will automatically download it (if it cannot be downloaded, you can copy the model into it yourself)

Enter the project folder:

```
cd /home/jetson/ultralytics/ultralytics/
```

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

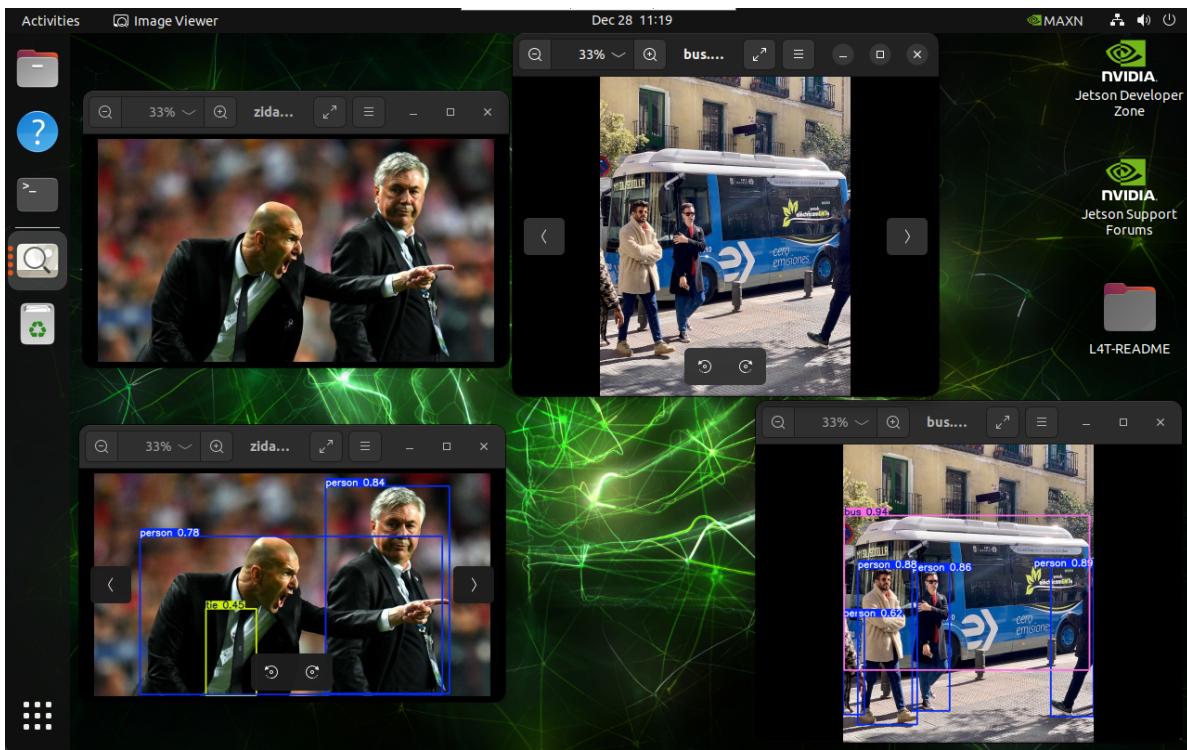
```
yolo predict model=yolo11n source='/home/jetson/ultralytics/ultralytics/assets'
```



Effect preview

Video location of yolo recognition output: /home/jetson/ultralytics/ultralytics/runs/detect;

Each time it runs, the predict in this folder automatically increases by 1



3.3, Video Prediction

Use `yolo11n.pt` to predict videos under the ultralytics project (not the videos that come with ultralytics): If the system does not find the corresponding model file in the directory where the command is run, it will automatically download it (if it cannot be downloaded, you can copy the model into it yourself)

Enter the project folder:

```
cd /home/jetson/ultralytics/ultralytics
```

Use `yolo11n.pt` to detect the video in the target folder and output the result:

```
yolo predict model=yolo11n source='/home/jetson/ultralytics/ultralytics/videos'
```

```
jetson@yahboom:~$ cd /home/jetson/ultralytics/ultralytics
jetson@yahboom:~/ultralytics$ yolo predict model=yolo1n source='/home/jetson/ultralytics/ultralytics/videos'
Ultralytics 8.3.55 + Python-3.10.12 torch-2.5.0a0+872d972e41.nv24.08 CUDA:0 (Orin, 7620MiB)
YOLO1n summary (fused): 238 layers, 2,616,248 parameters, 0 gradients, 6.5 GFLOPs

video 1/1 (frame 1/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 2 dogs, 14.8ms
video 1/1 (frame 2/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 2 dogs, 1 sheep, 41.3ms
video 1/1 (frame 3/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 2 dogs, 1 sheep, 41.5ms
video 1/1 (frame 4/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 2 dogs, 1 sheep, 44.2ms
video 1/1 (frame 5/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 1 dog, 2 sheep, 23.6ms
video 1/1 (frame 6/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 1 dog, 2 sheep, 41.8ms
video 1/1 (frame 7/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 2 sheep, 45.2ms
video 1/1 (frame 8/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 1 dog, 2 sheep, 38.3ms
video 1/1 (frame 9/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 2 sheep, 25.8ms
video 1/1 (frame 10/119) /home/jetson/ultralytics/ultralytics/videos/01.people_animals.mp4: 480x640 2
persons, 2 sheep, 31.9ms
```

Effect preview

Video location of yolo recognition output: /home/jetson/ultralytics/ultralytics/runs/detect

Each time it runs, the predict in this folder automatically increases by 1

You can use ffmpeg to view the video and install it using the following command:

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

Play video:

```
ffplay <video_name>.avi
```

The screenshot displays a Linux desktop environment with two terminal windows and a background visualization.

Top Terminal:

```
jetson@yahboom:~/ultralytics/ultralytics/runs/detect/predict$ ffplay people_animals.avi
```

Bottom Terminal:

```
jetson@yahboom:~/ultralytics/ultralytics/videos$ ffplay people_animals.mp4
```

Background Visualization:

A green neural network visualization is overlaid on the desktop background, showing a complex web of interconnected nodes and edges.

3.4, Real-time prediction

Use yolo11n.pt to predict the USB camera screen: If the system does not find the corresponding model file in the directory where the command is run, it will automatically download it (if it cannot be downloaded, you can copy the model into it yourself)

Enter the project folder:

```
cd /home/jetson/ultralytics/ultralytics
```

Use yolo11n.pt to detect the camera image and output the result: Currently, only USB cameras can directly use CLI to predict real-time images. CSI cameras have not found relevant information directly as input sources

```
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 key to terminate the program!

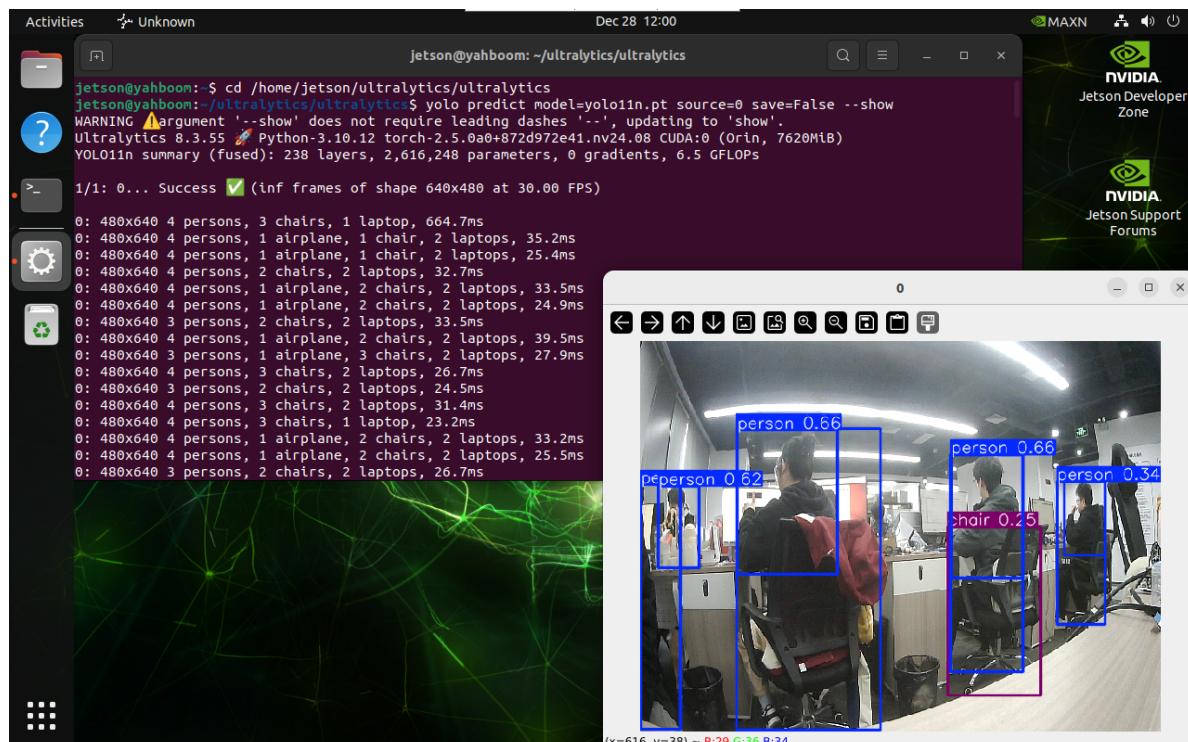
Parameter Description

model: Specify the YOLO model

source: Specify the recognition source: Multiple cameras can switch numbers

save=False: Disable saving results

show: Real-time display



References

<https://github.com/ultralytics/ultralytics>

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