????pytorch?torchvision

PyTorch □ Python □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ Python □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ API □□□□□□ GPU □□□

NVIDIA □ Jetson □□□□□□□□□□□□□□□□□□□□□□□□□□□□

PyTorch Version	NVIDIA Framework Container	NVIDIA Framework Wheel	JetPack Version
2.8.0a0+5228986c39	25.06	-	6.2
2.8.0a0+5228986c39	25.05	-	6.2
2.7.0a0+79aa17489c	25.04	-	6.2
2.7.0a0+7c8ec84dab	25.03	-	6.2
2.7.0a0+6c54963f75	25.02	-	6.2
2.6.0a0+ecf3bae40a	25.01	-	6.1
2.6.0a0+df5bbc09d1	24.12	-	6.1
2.6.0a0+df5bbc0	24.11	-	6.1
2.5.0a0+e000cf0ad9	24.10	-	6.1
2.5.0a0+b465a5843b	24.09	24.09	6.1
2.5.0a0+872d972e41	24.08	-	6.0
2.4.0a0+3bcc3cddb5	24.07	24.07	6.0
2.4.0a0+f70bd71a48	24.06	24.06	6.0
2.4.0a0+07cecf4168	24.05	24.05	6.0
2.3.0a0+6ddf5cf85e	24.04	24.04	6.0 Developer Preview
2.3.0a0+40ec155e58	24.03	24.03	
2.3.0a0+ebedce2	24.02	24.02	
2.2.0a0+81ea7a4	23.12, 24.01	23.12, 24.01	
2.2.0a0+6a974bec	23.11	23.11	

PyTorch Version	NVIDIA Framework Container	NVIDIA Framework Wheel	JetPack Version
2.1.0a		23.06	5.1.x
2.0.0		23.05	
2.0.0a0+fe05266f		23.04	
2.0.0a0+8aa34602		23.03	
1.14.0a0+44dac51c		23.02, 23.01	
1.13.0a0+936e930		22.11	5.0.2
1.13.0a0+d0d6b1f		22.09, 22,10	
1.13.0a0+08820cb	22.07	22.07	
1.13.0a0+340c412	22.06	22.06	5.0.1
1.12.0a0+8a1a93a9	22.05	22.05	5.0
1.12.0a0+bd13bc66		22.04	
1.12.0a0+2c916ef		22.03	
1.11.0a0+bfe5ad28		22.01	4.6.1

□□□□ **JetPack6.2.1 cuda12.6** □□□

1.??torch???

1.1?????torch , torchvison

```
wget https://pypi.jetson-ai-lab.io/jp6/cu126/+f/62a/1beee9f2f1470/torch-2.8.0-cp310-cp310-linux_aarch64.whl
wget https://pypi.jetson-ai-lab.io/jp6/cu126/+f/907/c4c1933789645/torchvision-0.23.0-cp310-cp310-linux_aarch64.whl
pip install torch-2.8.0-cp310-cp310-linux_aarch64.whl torchvision-0.23.0-cp310-cp310-linux_aarch64.whl -i https://pypi.tuna.tsinghua.edu.cn/simple
```

1.2 ????????

□□ python□□□□□□□

```
jetson@jetson-desktop:~$ python
Python 3.10.16 (main, Dec 11 2024, 16:18:56) [GCC 11.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
```

```
>>> import torch
>>> print(torch.__version__)
2.8.0
>>> print(torch.cuda.is_available())
True
```

2. ??YOLO11

YOLO

是一种实时目标检测算法，它将目标检测视为单阶段回归问题，通过将图像划分为网格并直接预测边界框与类别概率，实现高速且高精度的检测。 YOLO系列因开源易用、部署灵活，广泛应用于自动驾驶、安防监控、工业质检等领域。

2.1 ??miniconda

```
curl -L https://repo.anaconda.com/miniconda/Miniconda3-py310_25.3.1-1-Linux-aarch64.sh | bash
source ~/miniconda3/bin/activate
conda --version
```

2.2 conda??

```
conda config --add channels https://mirrors.ustc.edu.cn/anaconda/pkgs/main/
conda config --add channels https://mirrors.ustc.edu.cn/anaconda/pkgs/free/
conda config --add channels https://mirrors.ustc.edu.cn/anaconda/cloud/conda-forge/
conda config --add channels https://mirrors.ustc.edu.cn/anaconda/cloud/msys2/
conda config --set show_channel_urls yes
```

2.3??conda??

```
conda create -n jetson-ai python=3.10
```

2.4 ??conda??

```
conda activate jetson-ai
```

2.5 ??torch?torchvison

```
wget https://pypi.jetson-ai-lab.io/jp6/cu126/+f/62a/1beee9f2f1470/torch-2.8.0-cp310-cp310-linux_aarch64.whl
wget https://pypi.jetson-ai-lab.io/jp6/cu126/+f/907/c4c1933789645/torchvision-0.23.0-cp310-cp310-linux_aarch64.whl
pip install torch-2.8.0-cp310-cp310-linux_aarch64.whl torchvision-0.23.0-cp310-cp310-linux_aarch64.whl -i https://pypi.tuna.tsinghua.edu.cn/simple
```

2.6 ??ultralytics

```
pip install ultralytics -i https://pypi.tuna.tsinghua.edu.cn/simple
```

2.7 ???????????

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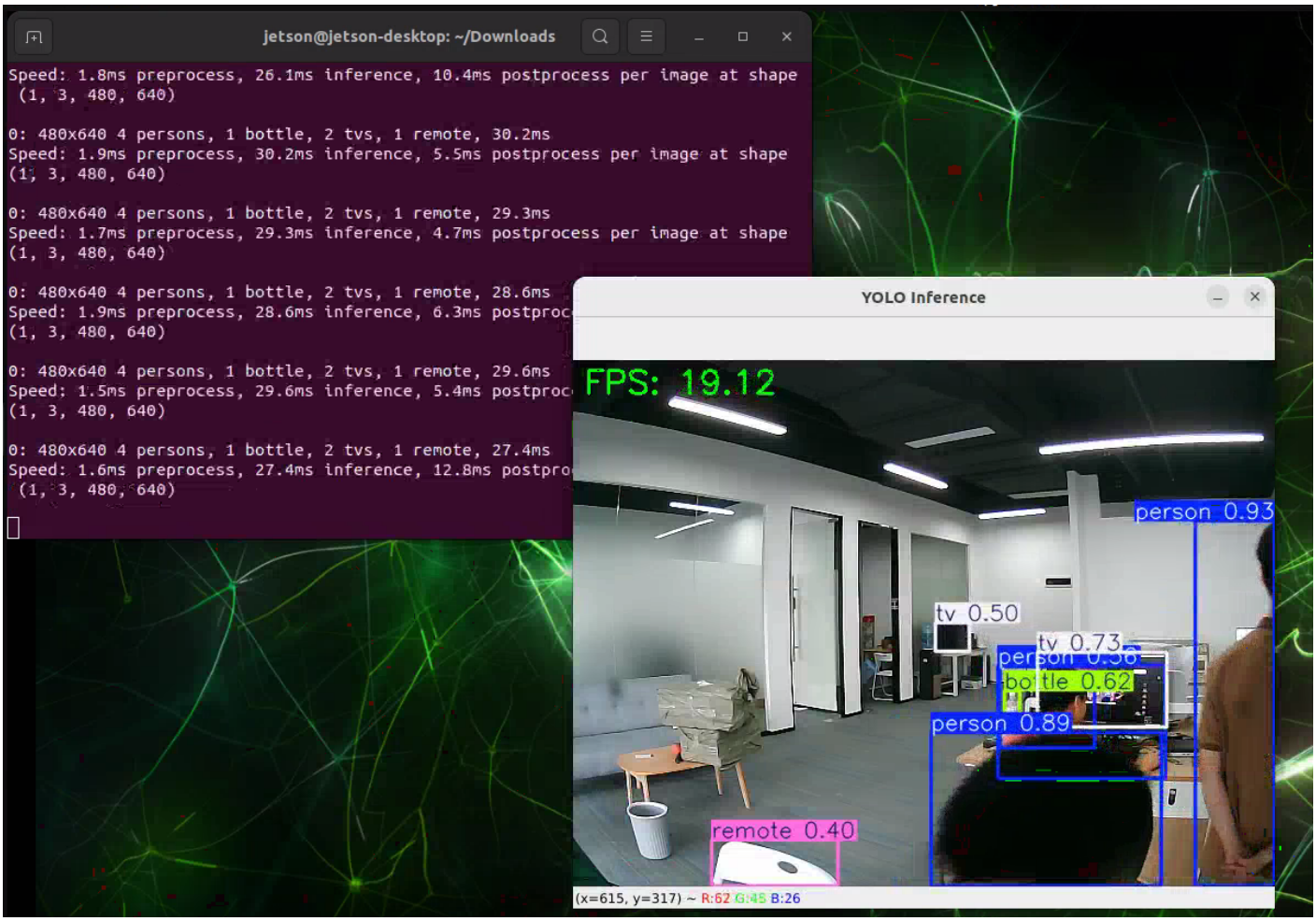
```
import cv2
import time
from ultralytics import YOLO
from ultralytics import YOLOWorld

# Load the YOLO model
model = YOLO("yolo11s.pt")

# Open the video file
video_path = 0
cap = cv2.VideoCapture(video_path)

# Loop through the video frames
while cap.isOpened():

    # Read a frame from the video
    success, frame = cap.read()
    start = time.time()
    if success:
        # Run YOLO inference on the frame
        results = model(frame)
        inf_time = time.time() - start
        # Visualize the results on the frame
        annotated_frame = results[0].plot()
        fps = 1.0 / inf_time if inf_time > 0 else 0
        # show FPS
        cv2.putText(annotated_frame, f"FPS: {fps:.2f}", (10, 30), cv2.FONT_HERSHEY_SIMPLEX, 1,
(0,255,0), 2)
        cv2.imshow("YOLO Inference", annotated_frame)

        # Break the loop if 'q' is pressed
        if cv2.waitKey(1) & 0xFF == ord("q"):
            break
```

```
    else:
        # Break the loop if the end of the video is reached
        break

# Release the video capture object and close the display window
cap.release()
cv2.destroyAllWindows()
```



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