


```
!pip install torch torchvision torchaudio
!pip install opencv-python-headless
!pip install yolov5
```

```
Requirement already satisfied: numpy>=1.21.2 in /usr/local/lib/python3.10/dist-packages (from opencv-python-headless)
Collecting yolov5
  Downloading yolov5-7.0.14-py37.py38.py39.py310-none-any.whl.metadata (10 kB)
Requirement already satisfied: gitpython>=3.1.30 in /usr/local/lib/python3.10/dist-packages (from yolov5) (3.1.4)
Requirement already satisfied: matplotlib>=3.3 in /usr/local/lib/python3.10/dist-packages (from yolov5) (3.8.0)
Requirement already satisfied: numpy>=1.18.5 in /usr/local/lib/python3.10/dist-packages (from yolov5) (1.26.4)
Requirement already satisfied: opencv-python>=4.1.1 in /usr/local/lib/python3.10/dist-packages (from yolov5) (4.10.0)
Requirement already satisfied: Pillow>=7.1.2 in /usr/local/lib/python3.10/dist-packages (from yolov5) (11.0.0)
Requirement already satisfied: psutil in /usr/local/lib/python3.10/dist-packages (from yolov5) (5.9.5)
Requirement already satisfied: PyYAML>=5.3.1 in /usr/local/lib/python3.10/dist-packages (from yolov5) (6.0.2)
Requirement already satisfied: requests>=2.23.0 in /usr/local/lib/python3.10/dist-packages (from yolov5) (2.32.0)
Requirement already satisfied: scipy>=1.4.1 in /usr/local/lib/python3.10/dist-packages (from yolov5) (1.13.1)
Collecting thop>=0.1.1 (from yolov5)
  Downloading thop-0.1.1.post2209072238-py3-none-any.whl.metadata (2.7 kB)
Requirement already satisfied: torch>=1.7.0 in /usr/local/lib/python3.10/dist-packages (from yolov5) (2.5.1+cu124)
Requirement already satisfied: torchvision>=0.8.1 in /usr/local/lib/python3.10/dist-packages (from yolov5) (0.20.1+cu124)
Requirement already satisfied: tqdm>=4.64.0 in /usr/local/lib/python3.10/dist-packages (from yolov5) (4.67.1)
Collecting ultralytics>=8.0.100 (from yolov5)
  Downloading ultralytics-8.3.53-py3-none-any.whl.metadata (35 kB)
Requirement already satisfied: tensorboard>=2.4.1 in /usr/local/lib/python3.10/dist-packages (from yolov5) (2.17.0)
Requirement already satisfied: pandas>=1.1.4 in /usr/local/lib/python3.10/dist-packages (from yolov5) (2.2.2)
Requirement already satisfied: seaborn>=0.11.0 in /usr/local/lib/python3.10/dist-packages (from yolov5) (0.13.2)
Requirement already satisfied: setuptools>=65.5.1 in /usr/local/lib/python3.10/dist-packages (from yolov5) (75.1.0)
Collecting fire (from yolov5)
  Downloading fire-0.7.0.tar.gz (87 kB)
  Preparing metadata (setup.py) ... done
Collecting boto3>=1.19.1 (from yolov5)
  Downloading boto3-1.35.86-py3-none-any.whl.metadata (6.7 kB)
Collecting sahi>=0.11.10 (from yolov5)
  Downloading sahi-0.11.20-py3-none-any.whl.metadata (17 kB)
Collecting huggingface-hub<0.25.0,>=0.12.0 (from yolov5)
  Downloading huggingface_hub-0.24.7-py3-none-any.whl.metadata (13 kB)
Collecting roboflow>=0.2.29 (from yolov5)
  Downloading roboflow-1.1.50-py3-none-any.whl.metadata (9.7 kB)
Collecting botocore<1.36.0,>=1.35.86 (from boto3>=1.19.1->yolov5)
  Downloading botocore-1.35.86-py3-none-any.whl.metadata (5.7 kB)
Collecting jmespath<2.0.0,>=0.7.1 (from boto3>=1.19.1->yolov5)
  Downloading jmespath-1.0.1-py3-none-any.whl.metadata (7.6 kB)
Collecting s3transfer<0.11.0,>=0.10.0 (from boto3>=1.19.1->yolov5)
  Downloading s3transfer-0.10.4-py3-none-any.whl.metadata (1.7 kB)
Requirement already satisfied: gitdb<5,>=4.0.1 in /usr/local/lib/python3.10/dist-packages (from gitpython>=3.1.30) (4.0.11)
Requirement already satisfied: filelock in /usr/local/lib/python3.10/dist-packages (from huggingface-hub<0.25.0,>=0.12.0) (3.16.1)
Requirement already satisfied: fsspec>=2023.5.0 in /usr/local/lib/python3.10/dist-packages (from huggingface-hub<0.25.0,>=0.12.0) (2024.10.0)
Requirement already satisfied: packaging>=20.9 in /usr/local/lib/python3.10/dist-packages (from huggingface-hub<0.25.0,>=0.12.0) (24.2)
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.10/dist-packages (from huggingface-hub<0.25.0,>=0.12.0) (4.12.2)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3) (1.3.0)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3) (4.56.0)
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3) (1.4.7)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3) (3.2.0)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3) (2.9.0)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-packages (from pandas>=1.1.4->yolov5) (2023.4)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.10/dist-packages (from pandas>=1.1.4->yolov5) (2024.2)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests>=2.23.0->yolov5) (3.4.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests>=2.23.0->yolov5) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests>=2.23.0->yolov5) (2.2.3)
```

```
import torch
import cv2
from matplotlib import pyplot as plt
```

```
# Load the YOLOv5 pre-trained model
model = torch.hub.load('ultralytics/yolov5', 'yolov5s') # 'yolov5s' is the small model
```

```
/usr/local/lib/python3.10/dist-packages/torch/hub.py:330: UserWarning: You are about to download and run code from
warnings.warn(
```


Downloading: "<https://github.com/ultralytics/yolov5/zipball/master>" to /root/.cache/torch/hub/master.zip  
 Creating new Ultralytics Settings v0.0.6 file   
 View Ultralytics Settings with 'yolo settings' or at '/root/.config/Ultralytics/settings.json'  
 Update Settings with 'yolo settings key=value', i.e. 'yolo settings runs\_dir=path/to/dir'. For help see <https://docs.ultralytics.com>  
 YOLOv5 🚀 2024-12-23 Python-3.10.12 torch-2.5.1+cu121 CPU

Downloading <https://github.com/ultralytics/yolov5/releases/download/v7.0/yolov5s.pt> to yolov5s.pt...  
 100%|██████████| 14.1M/14.1M [00:00<00:00, 75.2MB/s]

Fusing layers...  
 YOLOv5s summary: 213 layers, 7225885 parameters, 0 gradients, 16.4 GFLOPs  
 Adding AutoShape...


```
from google.colab import files
uploaded = files.upload()
```

```
# Read the image from the uploaded file
img_path = list(uploaded.keys())[0]
image = cv2.imread(img_path) # OpenCV uses BGR by default
```

  grp.jpeg  
 • **grp.jpeg**(image/jpeg) - 8866 bytes, last modified: 12/23/2024 - 100% done  
 Saving grp.jpeg to grp (1).jpeg

```
# Perform inference
results = model(img_path)

# Display results
results.show() # This will display the image with bounding boxes
```

 /root/.cache/torch/hub/ultralytics\_yolov5\_master/models/common.py:892: FutureWarning: `torch.cuda.amp.autocast(arg`  
 with amp.autocast(autocast):

