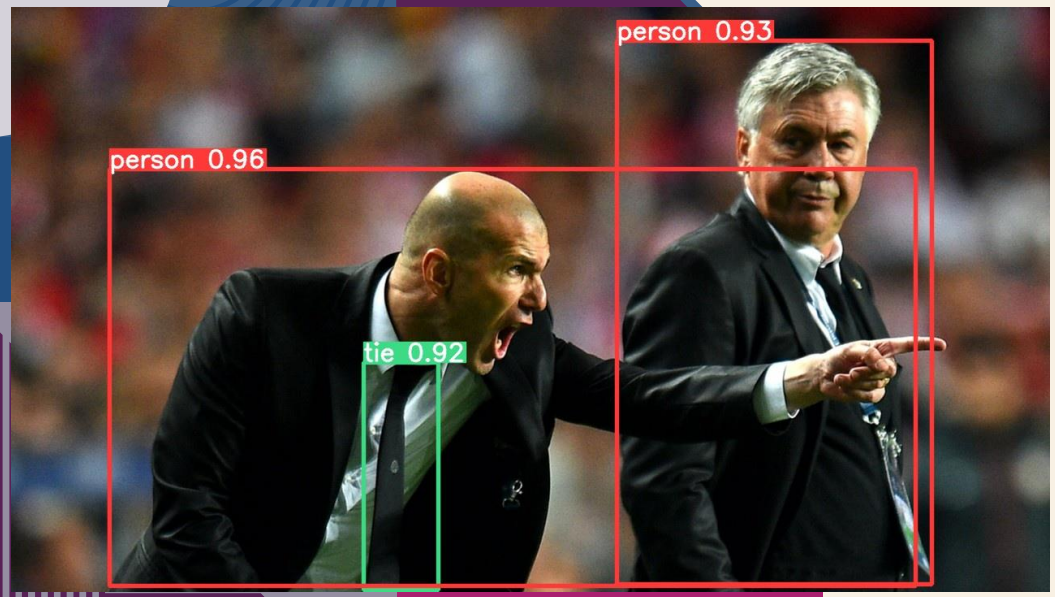
WORKING WITH YOLO

Michael Tolmajian, Javier Ramos,
Youssef Ali, Ali Bou Haidar

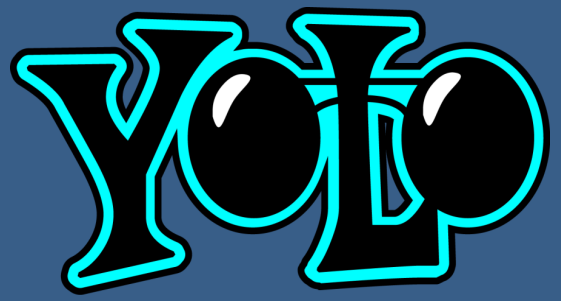


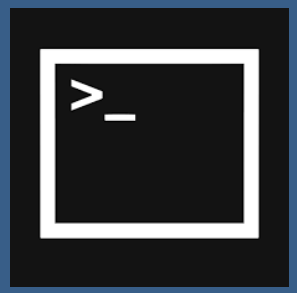
ABOUT YOLO

- Object detection algorithm
- Provided with different versions
- Single-stage algorithm
  - Classification, Segmentation, Detection
- Faster than other object detection algorithms

REQUIREMENTS

- Software
  - You-Only-Look-Once
    - V5
      - Yolov5n6.pt
      - Yolov5x6.pt
    - V7
      - Yolov7.pt
    - V8
      - Yolov8n.pt
      - Yolov8x.pt
  - Python and Command Prompt
- Hardware
  - Intel Core i7-10750H
  - Intel Core i9-11900H





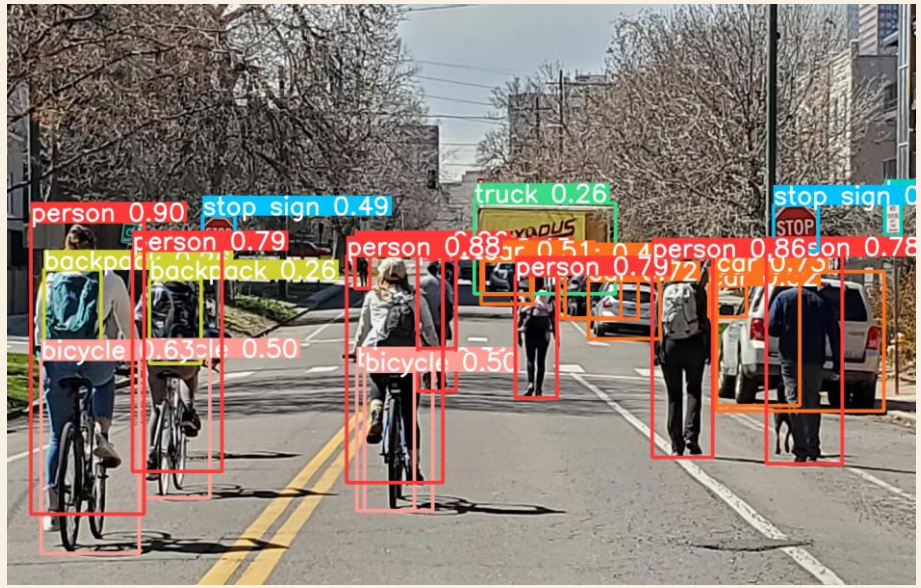
YOLOV8 TRACKING TRAFFIC

OTHER SAMPLES USED

YOLO APPEARANCE

DENVER OPEN STREET

Yolov8n.pt



LIVING ROOM

Yolov7.pt

INTEL CORE DIFFERENCE

INTEL CORE I7 (1,468.1 MS INFERENCE)

```
(venv) C:\Users\tolma\yolov8>yolo predict model=yolov8x.pt source=denver-open-streets.jpg device=cpu
WARNING ⚠ user config directory 'C:\Users\tolma\AppData\Roaming\SPB_Data\AppData\Roaming\Ultralytics' is not writeable,
 defaulting to '/tmp' or CWD.Alternatively you can define a YOLO_CONFIG_DIR environment variable for this path.
Ultralytics YOLOv8.0.218 🚀 Python-3.8.0 torch-2.1.0+cu118 CPU (Intel Core(TM) i7-10750H 2.60GHz)
YOLOv8x summary (fused): 268 layers, 68200608 parameters, 0 gradients, 257.8 GFLOPs

image 1/1 C:\Users\tolma\yolov8\denver-open-streets.jpg: 416x640 9 persons, 4 bicycles, 6 cars, 1 truck, 2 traffic light
s, 2 stop signs, 2 dogs, 4 backpacks, 1468.1ms
Speed: 11.0ms preprocess, 1468.1ms inference, 18.0ms postprocess per image at shape (1, 3, 416, 640)
Results saved to runs\detect\predict4
💡 Learn more at https://docs.ultralytics.com/modes/predict
```

INTEL CORE I9 (686.6 MS INFERENCE)

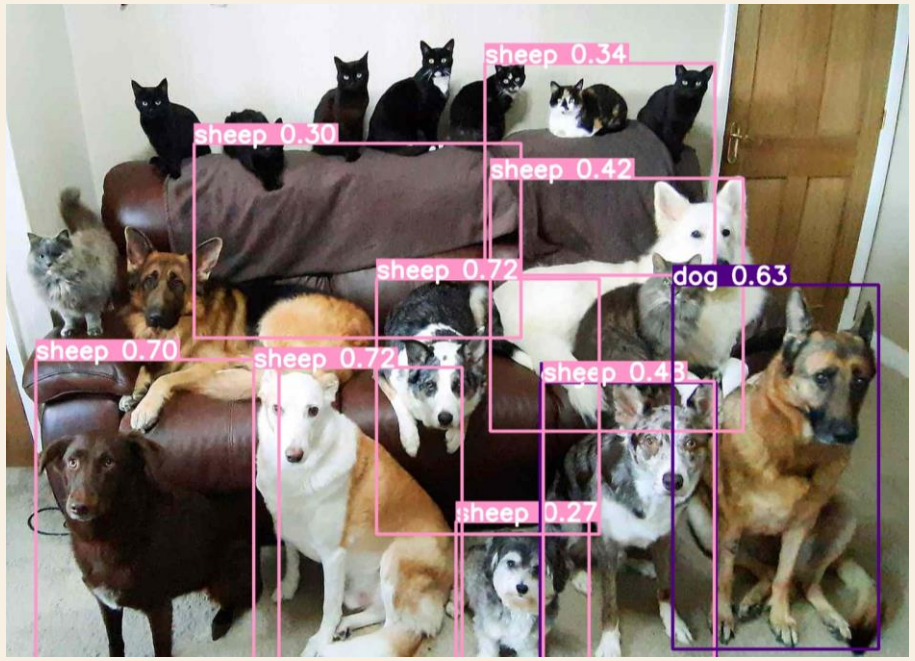
```
(myenv) C:\Users\youss\yolov8>yolo predict model=yolov8x.pt source= "C:\Users\youss\Downloads\denver-open-streets.jpg"
Ultralytics YOLOv8.0.196  Python-3.11.5 torch-2.1.0+cpu CPU (11th Gen Intel Core(TM) i9-11900H 2.50GHz)
YOLOv8x summary (fused): 268 layers, 68200608 parameters, 0 gradients, 257.8 GFLOPs

image 1/1 C:\Users\youss\Downloads\denver-open-streets.jpg: 416x640 9 persons, 4 bicycles, 6 cars, 1 truck, 2 traffic lights, 2 stop signs, 2 dogs
, 4 backpacks, 686.8ms
Speed: 2.9ms preprocess, 686.8ms inference, 1.9ms postprocess per image at shape (1, 3, 416, 640)
Results saved to C:\Users\youss\yolov8\runs\detect\predict12
 Learn more at https://docs.ultralytics.com/modes/predict
```

YOLO MODEL DIFFERENCE

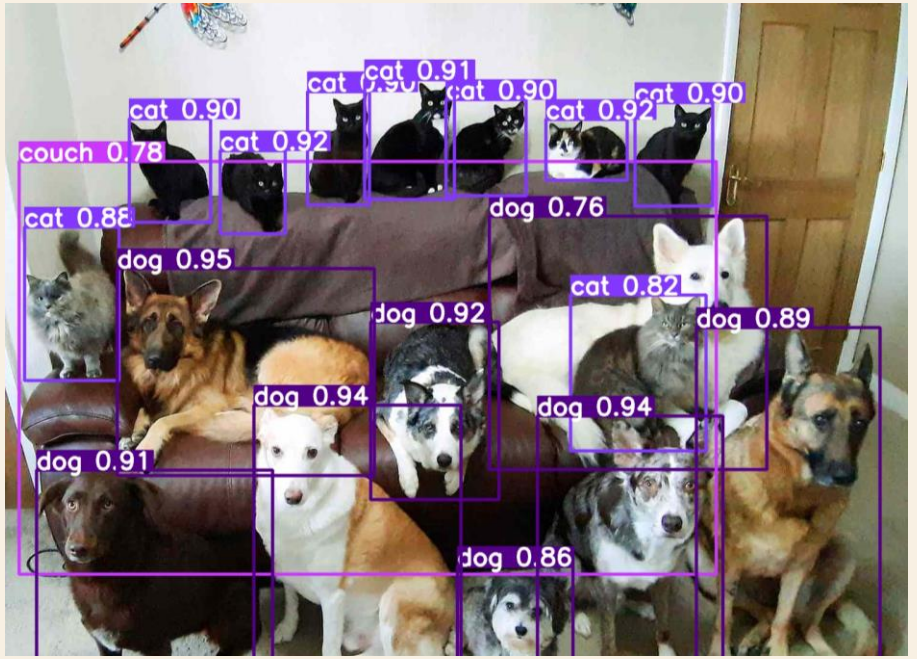
Performance between a small model vs a large model of YOLOv5 using Core i7

YOLOV5N6.PT



96.0 ms inference

YOLOV5X6.PT



1093.9 ms inference

THANK YOU

Any question? Any problem? Any concern?