

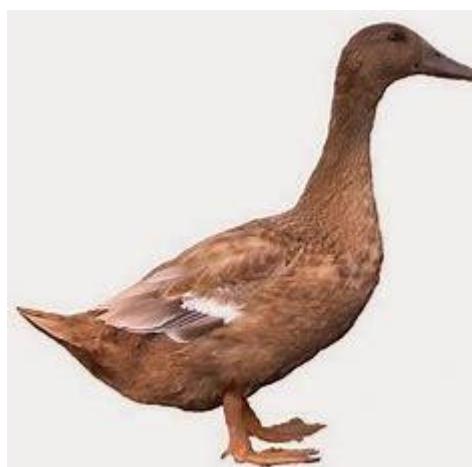
# Yolo Object Detection

มี 3 class

- cat
- ped
- nok



## รูปเทส คือ



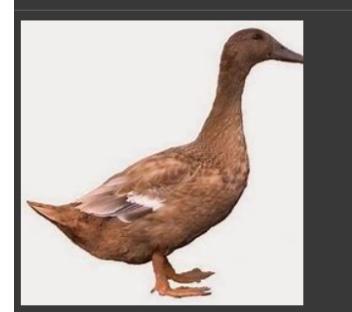
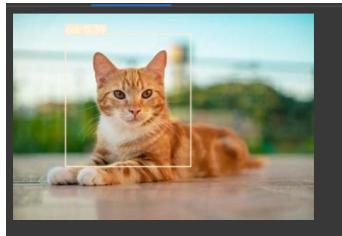
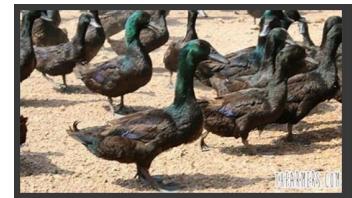
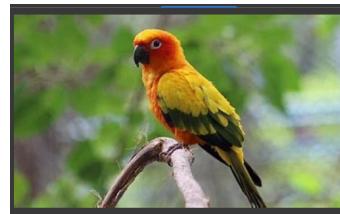
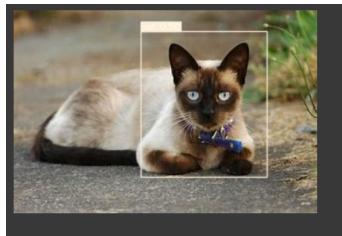
## ผลการทดลอง

ครั้งที่ 1 epochs 50 conf 0.25

```
25s  ⏴  | python detect.py --weights runs/train/exp3/weights/best.pt --conf 0.25 --source test
[  ↗ Namespace(weights=['runs/train/exp3/weights/best.pt'], source='test', img_size=640, conf_thres=0.25, iou_thres=0.45, device='', view_img=False,
  YOLOR ✎ 8e9f0b7 torch 2.1.0+cu121 CUDA:0 (Tesla T4, 15102.0625MB)

  Fusing layers...
  RepConv.fuse_repvgg_block
  RepConv.fuse_repvgg_block
  RepConv.fuse_repvgg_block
  IDetect.fuse
  /usr/local/lib/python3.10/dist-packages/torch/functional.py:504: UserWarning: torch.meshgrid: in an upcoming release, it will be required to par
    return _VF.meshgrid(tensors, **kwargs) # type: ignore[attr-defined]
  Model Summary: 314 layers, 36492560 parameters, 6194944 gradients, 103.2 GFLOPS
  Convert model to Traced-model...
  traced_script_module saved!
  model is traced!

  1 cat, Done. (16.9ms) Inference, (504.9ms) NMS
  The image with the result is saved in: runs/detect/exp3/cat1.jpg
  1 cat, Done. (16.9ms) Inference, (1.3ms) NMS
  The image with the result is saved in: runs/detect/exp3/cat2.jpg
  Done. (15.9ms) Inference, (1.2ms) NMS
  The image with the result is saved in: runs/detect/exp3/nok1.jpg
  Done. (15.8ms) Inference, (0.8ms) NMS
  The image with the result is saved in: runs/detect/exp3/nok2.jpg
  1 nok, Done. (18.3ms) Inference, (1.2ms) NMS
  The image with the result is saved in: runs/detect/exp3/nok4.jpg
  Done. (15.8ms) Inference, (0.3ms) NMS
  The image with the result is saved in: runs/detect/exp3/ped1.jpg
  Done. (22.3ms) Inference, (0.3ms) NMS
  The image with the result is saved in: runs/detect/exp3/ped2.jpg
  Done. (1.588s)
```



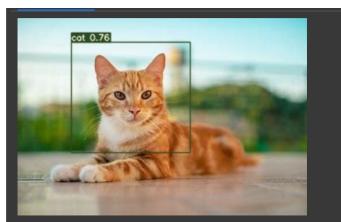
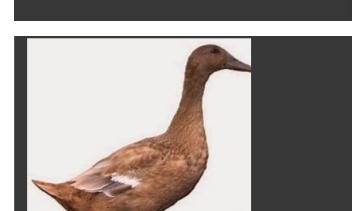
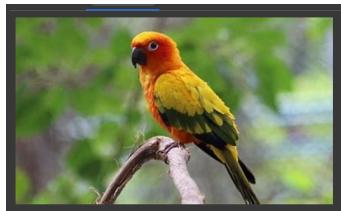
หลังจาก test อันนี้ผลคือแยกแมวได้ทั้งสองรูปและนกอีกหนึ่ง แต่ไม่สามารถแยกเป็ดได้ลักษณะ

## ครั้งที่ 2 epochs 100 conf 0.35

```
!python detect.py --weights runs/train/exp2/weights/best.pt --conf 0.35 --source test
Namespace(weights=['runs/train/exp2/weights/best.pt'], source='test', img_size=640, conf_thres=0.35, iou_thres=0.45, device='', view_img=False,
          YOLOR ✎ 8e9f0b7 torch 2.1.0+cu121 CUDA:0 (Tesla T4, 15102.0625MB)

Fusing layers...
RepConv.fuse_repvgg_block
RepConv.fuse_repvgg_block
RepConv.fuse_repvgg_block
IDetect.fuse
/usr/local/lib/python3.10/dist-packages/torch/functional.py:504: UserWarning: torch.meshgrid: in an upcoming release, it will be required to pass
    return _VF.meshgrid(tensors, **kwargs) # type: ignore[attr-defined]
Model Summary: 314 layers, 36492560 parameters, 6194944 gradients, 103.2 GFLOPS
Convert model to Traced-model...
traced_script_module saved!
model is traced!

1 cat, Done. (16.9ms) Inference, (690.0ms) NMS
The image with the result is saved in: runs/detect/exp8/cat1.jpg
Done. (17.0ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp8/cat2.jpg
Done. (15.9ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp8/nok1.jpg
Done. (15.9ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp8/nok2.jpg
Done. (18.3ms) Inference, (0.9ms) NMS
The image with the result is saved in: runs/detect/exp8/nok4.jpg
Done. (15.8ms) Inference, (0.3ms) NMS
The image with the result is saved in: runs/detect/exp8/ped1.jpg
Done. (13.7ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp8/ped2.jpg
Done. (2.236s)
```



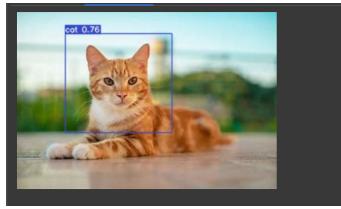
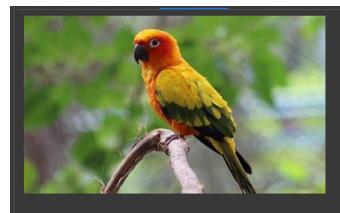
ผลลัพธ์คือแยกได้เท่าครึ่งแรกแต่เลขข้างหลังไม่เท่ากัน ก็ยังไม่สามารถแยกเป็นได้

### ครั้งที่ 3 epochs 100 conf 0.55

```
22s  ⏎ !python detect.py --weights runs/train/exp2/weights/best.pt --conf 0.55 --source test
Namespace(weights=['runs/train/exp2/weights/best.pt'], source='test', img_size=640, conf_thres=0.55, iou_thres=0.45, device='', view_img=False, YOLOR ✨ 8e9f0b7 torch 2.1.0+cu121 CUDA:0 (Tesla T4, 15102.0625MB)

Fusing layers...
RepConv.fuse_repvgg_block
RepConv.fuse_repvgg_block
RepConv.fuse_repvgg_block
IDetect.fuse
/usr/local/lib/python3.10/dist-packages/torch/functional.py:504: UserWarning: torch.meshgrid: in an upcoming release, it will be required to pass
    return _VF.meshgrid(tensors, **kwargs) # type: ignore[attr-defined]
Model Summary: 314 layers, 36492560 parameters, 6194944 gradients, 103.2 GFLOPS
Convert model to Traced-model...
traced_script_module saved!
model is traced!

Done. (16.8ms) Inference, (21.2ms) NMS
The image with the result is saved in: runs/detect/exp5/cat1.jpg
1 cat, Done. (16.8ms) Inference, (409.7ms) NMS
The image with the result is saved in: runs/detect/exp5/cat2.jpg
Done. (15.8ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp5/nok1.jpg
Done. (15.8ms) Inference, (0.3ms) NMS
The image with the result is saved in: runs/detect/exp5/nok2.jpg
Done. (18.3ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp5/nok4.jpg
Done. (15.8ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp5/ped1.jpg
Done. (15.1ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp5/ped2.jpg
Done. (1.488s)
```



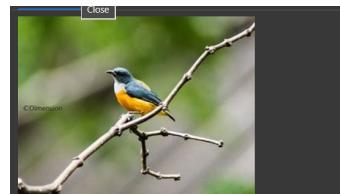
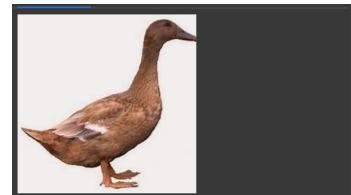
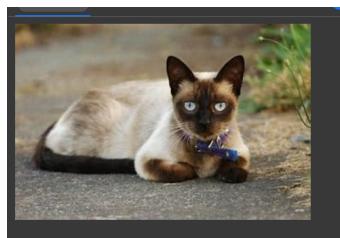
แยกได้แค่แนวและเลขเท่ากับครั้งที่สอง สันนิฐานว่าที่แยกเลขได้เท่ากัน เพราะ epochs เท่ากันแต่ conf ไม่เท่าเลยแยกรูปอื่นไม่ได้เท่ากัน และเปิดก็ยังแยกไม่ได้เหมือนเดิม

ครั้งที่ 4 epochs 25 conf 0.25

```
!python detect.py --weights runs/train/exp4/weights/best.pt --conf 0.25 --source test
Namespace(weights=['runs/train/exp4/weights/best.pt'], source='test', img_size=640, conf_thres=0.25, iou_thres=0.45, device='', view=False)
YOLOR 8e9f0b7 torch 2.1.0+cu121 CUDA:0 (Tesla T4, 15102.0625MB)

Fusing layers...
RepConv.fuse_repvgg_block
RepConv.fuse_repvgg_block
RepConv.fuse_repvgg_block
IDetect.fuse
/usr/local/lib/python3.10/dist-packages/torch/functional.py:504: UserWarning: torch.meshgrid: in an upcoming release, it will be removed. return _VF.meshgrid(tensors, **kwargs) # type: ignore[attr-defined]
Model Summary: 314 layers, 36492560 parameters, 6194944 gradients, 103.2 GFLOPS
Convert model to Traced-model...
traced_script_module saved!
model is traced!

Done. (16.9ms) Inference, (9.9ms) NMS
The image with the result is saved in: runs/detect/exp7/cat1.jpg
Done. (16.9ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp7/cat2.jpg
Done. (15.8ms) Inference, (0.3ms) NMS
The image with the result is saved in: runs/detect/exp7/nok1.jpg
Done. (15.8ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp7/nok2.jpg
Done. (18.3ms) Inference, (0.4ms) NMS
The image with the result is saved in: runs/detect/exp7/nok4.jpg
Done. (15.8ms) Inference, (0.3ms) NMS
The image with the result is saved in: runs/detect/exp7/ped1.jpg
Done. (16.6ms) Inference, (0.3ms) NMS
The image with the result is saved in: runs/detect/exp7/ped2.jpg
Done. (0.922s)
```



แยกไม่ได้เลย น่าจะมาจาก epochs ที่ต่ำและ conf ที่ต่ำสุดเช่นกัน

สรุปคือ แยกได้หรือไม่ได้เหตุผลหลักน่าจะมาจากการ รูปดันแบบ เช่นเปิดที่มีหลายตัวเลยทำให้เลือกไม่ได้ และภาพอาจไม่คมชัด การครอบปโตนแรกอาจจะไม่ใช่ด้วย ส่วนเหตุผลต่อมาอาจจะการวนรอบของ epochs ที่ต่ำและ conf ที่ตั้งต่ำ เช่นกันดูจากถ้ายิ่งตั้งสูงเหมือนกันก็จะไปกันได้จากที่ 100-0.35คือเลข ที่แยกได้เยอะที่สุด ทั้งนี้ล้วนเป็นแค่ข้อสันนิฐานส่วนตัวเท่านั้น อาจจะไม่เป็นจริงก็ได้ เพราะทำการทดลองน้อยขอสรุปแน่อนลึนมีความเชื่อถือต่ำ

65022319 กรกนก สุทธิธน  
65024838 ปานณภัส สุขสัมพันธ์  
65022678 ภัทรวดี หน่อเม้ม  
65025840 กาญจนा ไชยสระ<sup>ช</sup>  
65025907 เบญจรัตน์ จำปางาม  
65026009 อริชา บัวผัด