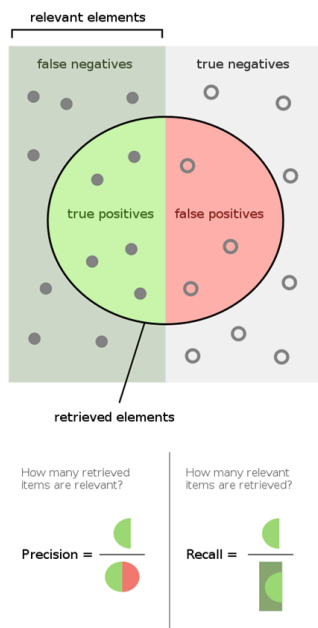


架構解析



- [Precision, Recall, F1-score簡單介紹. 給機器學習模型打分數](#)
- recall = sensitivity!!!!
- 有規定的data格式gt=>txt檔
- 要有一個yaml檔, 類似於整體資料的資訊(數量、分類類別...)
- [YOLO系列 -使用客製化數據集跑通YOLOV7演算法. 其實YOLOV7是在YOLO... | by KevinLuo](#)
- 我用roboflow做出一個XML檔,和roboflow網頁左邊的格式對照了一下

網頁	XML
width	xmax-xmin
hight	ymax-ymin

- 用XML檔(x1,x2)和yolo的txt檔(weight,height)對照數據
 - 第一個是類別
 - 接著是x1/width,y1/height,x2/width,y2/height...
 - [yolo图像检测数据集格式转换:xml 与 txt格式相互转换](#)
 - x橫軸,y縱軸

用已生成的binary mask寫成yolo需要的txt檔方法:

- **binary2txt.py**
- 找出多邊形的轉折點x1,y1,x2,y2...

- x1/width,y1/height,x2/width,y2/height...
- 我把0補進valid=>

yolov7的指令:

```
python segment/train.py --data coco.yaml --batch 16 --weights '' --cfg
yolov7-seg.yaml --epochs 300 --name yolov7-seg --img 640 --hyp
hyp.scratch-high.yaml
```

其他要寫的說明:

- ☐ 要記得寫yaml檔說明類別
 - ☒ coco.yaml=>CTS.yaml
 - ☒ yolov7.yaml=>yolov7_CTS.yaml
- ☐ [【小白教学】如何用YOLOv7训练自己的数据集](#)
- ☒ 還要生成test_list.txt,train_list跟val_list.txt=>txt_list.py
 - ☐ 如果還有要用3fold data要從server下載
- ☐ [Yolov7训练自己的数据集\(超详细教程\)](#)
- ☐ 下載分割分branch=> git clone path -b xxx
- ☐ [GITHUB 要如何設定下載的分枝branch @新精讚](#)
- ☐ 修改train.py u7的
 - ☒ --weights weights/yolov7.pt
 - ☒ --cfg cfg/training/yolov7_CTS.yaml
 - ☒ --data data/CTS.yaml
 - ☒ --device 0 I look
 - ☒ --batch-size 2
 - ☒ --epoch 250
 - ☒ yolov7-seg.yaml的nc也要改!!!

每次訓練要改data要做的事:

- 改CTS.yaml檔指定資料夾路徑
- train_list,val_list.txt(txt_list.py)

server的設備:Python-3.7.16 torch-1.13.1+cu117 CUDA:0 (NVIDIA RTX A6000, 48685MiB)

環境:yolo_

cd 到seg

/mnt/disk1/tingxuan/yolov7/u7/seg/

分割訓練的指令:

- `python segment/train_MN.py --data data/CTS.yaml --batch 2 --weights weights/yolov7-seg.pt --cfg moels/segment/yolov7-seg.yaml --epochs 250 --name v1 --img 512 --hyp hyp.scratch-high.yaml`
 - `train-segv12!!!`

```
250 epochs completed in 8.413 hours.
Optimizer stripped from runs/train-seg/v12/weights/last.pt, 76.1MB
Optimizer stripped from runs/train-seg/v12/weights/best.pt, 76.1MB
Validating runs/train-seg/v12/weights/best.pt ...
Fusing layers ...
yolov7-seg summary: 325 layers, 37847870 parameters, 0 gradients, 141.9 GFLOPs

```

Class	Images	Instances	Box(P)	R	mAP50	mAP50-95	Mask(P)	R	mAP50	mAP50-95
all	179	179	0.964	0.917	0.983	0.725	0.961	0.947	0.988	0.659
normal	179	88	0.929	0.92	0.975	0.643	0.922	0.955	0.985	0.599
CTS	179	91	1	0.914	0.991	0.807	1	0.94	0.991	0.719

```
Results saved to runs/train-seg/v12
(yolo ) 410lab@user:/mnt/disk1/tingxuan/yolov7/u7/seg$
```

- `patience=100=>best epoch`在 目前epoch-100-1

訓練遇到的error:

- No labels found in /mnt/disk1/tingxuan/yolov7/u7/seg/dataset/ori/train.cache, can not start training.
 - /mnt/disk1/tingxuan/yolov7/u7/seg/**dataset/ori/dataset/ori**/images/train/0.bmp
 - .txt路徑不對
- AttributeError: 'list' object has no attribute 'shape'
 - [u7-seg error: AttributeError: 'list' object has no attribute 'shape' · Issue #1259 · WongKinYiu/yolov7 · GitHub](#)
 - `python segment/train_MN.py --data data/CTS.yaml --batch 2 --weights weights/yolov7-seg.pt --cfg models/segment/yolov7-seg.yaml --epochs 250 --name v1 --img 512 --hyp hyp.scratch-high.yaml`
- error: argument --imgsz/--img/--img-size: invalid int value: '[256,512]'
 - [Image size during training in yolov5 - Stack Overflow](#)

預測的指令:

1. `python segment/predict.py --weights /mnt/disk1/tingxuan/yolov7/u7/seg/runs/train-seg/v12/weights/best.pt --source /mnt/disk1/tingxuan/yolov7/u7/seg/dataset/ori/images/test/`

2. python segment/predict.py --weights

C:\Users\Tippy\Desktop\yolov7\u7\seg\runs\train-seg\v12\weights\best.pt

--source C:\Users\Tippy\Desktop\yolov7\u7\seg\dataset\test\

```
image 856/857 /mnt/disk1/tingxuan/yolov7/u7/seg/dataset/ori/images/test/98.bmp: 320x640 (no detections), 12.2ms
image 857/857 /mnt/disk1/tingxuan/yolov7/u7/seg/dataset/ori/images/test/99.bmp: 320x640 (no detections), 12.8ms
Speed: 0.3ms pre-process, 16.5ms inference, 0.8ms NMS per image at shape (1, 3, 640, 640)
Results saved to runs/predict-seg/exp
(yolo_) 410lab@user:/mnt/disk1/tingxuan/yolov7/u7/seg$
```

3. 要記得--img 512!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

預測的問題:

- 字體太大
 - a. `parser.add_argument('--line-thickness', default=2, type=int, help='bounding box thickness (pixels)')`

- 只想要confidence最高的一個

```
247 parser.add_argument('--max-det', type=int, default=1, help='maximum detections per image')
```

- 只保留segment result
 - a. `predict_try.py`##在server上的才是正確的!!
- 類別在txt檔[0]
 - a. `--save-txt True`
 - b. 存在labels資料夾
- no detection
 - a. [Not detecting objects on image · Issue #1215 · WongKinYiu/yolov7 · GitHub](#)
- `val.py --save-txt => RuntimeError: shape '[1, 4]' is invalid for input of size 36`
 - a. [RuntimeError when using "segment/predict.py" with --save-txt · Issue #10669 · ultralytics/yolov5 · GitHub](#)

計算指標:

- 有內建!!!!`val.py`
- 我把`data.yaml`的`val`都改成`test`的路徑!!!!
- 以後都要寫`label/test val`才能算
- [YOLOV7学习记录之mAP计算_51CTO博客](#) 有可愛貓咪
-

每次要確實Check:

- --weight
- --name
- --data

訓練紀錄:

- python segment/train_MN.py --data data/CTS.yaml --batch 2 --weights weights/yolov7-seg.pt --cfg models/segment/yolov7-seg.yaml --epochs 250 --name ori --img 512 --hyp hyp.scratch-high.yaml

```
Stopping training early as no improvement observed in last 100 epochs. Best results observed at epoch 131, best model saved as best.pt.
To update EarlyStopping(patience=100) pass a new patience value, i.e. `python train.py --patience 300` or use `--patience 0` to disable EarlyStopping.

232 epochs completed in 8.784 hours.
Optimizer stripped from runs/train-seg/I5_BCMFC_1/weights/last.pt, 76.1MB
Optimizer stripped from runs/train-seg/I5_BCMFC_1/weights/best.pt, 76.1MB

Validating runs/train-seg/I5_BCMFC_1/weights/best.pt...
Fusing layers...
yolov7-seg summary: 325 layers, 37847870 parameters, 0 gradients, 141.9 GFLOPs

```

Class	Images	Instances	Box(P)	R	mAP50	mAP50-95)	Mask(P)	R	mAP50	mAP50-95)
all	94	94	0.411	0.809	0.627	0.379	0.411	0.809	0.627	0.384
normal	94	47	0.527	0.617	0.566	0.37	0.527	0.617	0.566	0.391
CTS	94	47	0.295	1	0.687	0.389	0.295	1	0.687	0.376

```
Results saved to runs/train-seg/I5_BCMFC_1
(yolo_) 410lab@user:/mnt/disk1/tingxuan/yolov7/u7/seg$
```

編號	name	check list	notes
2	ori	<input checked="" type="checkbox"/> yaml=CTS.yaml <input checked="" type="checkbox"/> txt_list <input checked="" type="checkbox"/> train_MN.py <input checked="" type="checkbox"/> device=0	GPU=4
4	MFC	<input checked="" type="checkbox"/> yaml=CTS_MFC.yaml <input checked="" type="checkbox"/> txt_list <input checked="" type="checkbox"/> train_MN.py <input checked="" type="checkbox"/> device=2	GPU=6
5	BC+MFC	<input checked="" type="checkbox"/> yaml=CTS_BCMFC.yaml <input checked="" type="checkbox"/> txt_list <input checked="" type="checkbox"/> train_MN.py <input checked="" type="checkbox"/> device=3	GPU=7