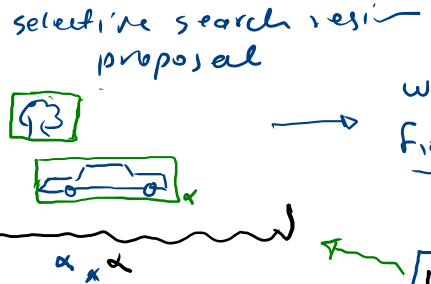
Fast R-CNN

Review

RoI → Region of interest.

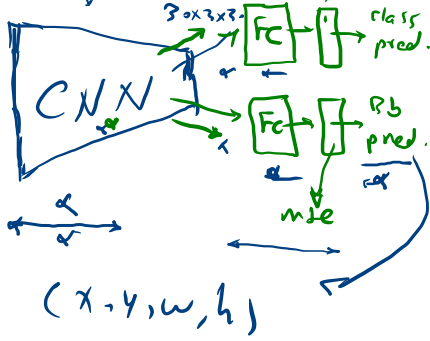
end ~~to~~ end

224×224

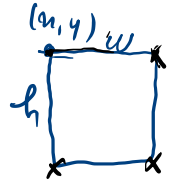


warp !

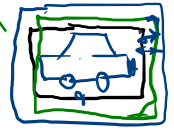
Fixed sizing !



(x, y, w, h)

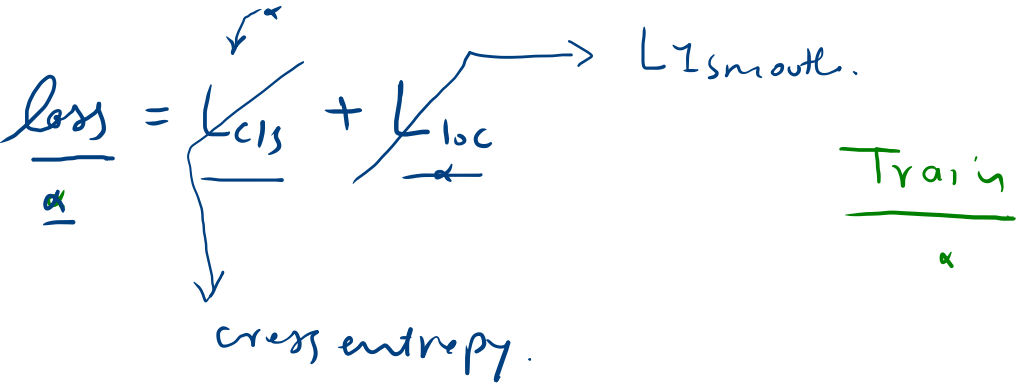


Bb Reg.



R-CNN

2000 RoI → Back X → NMS → ...



Train

Metrics

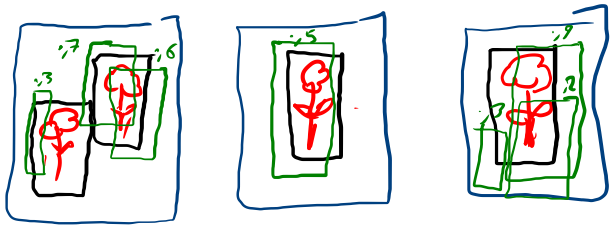
1. FPS → frame per second.

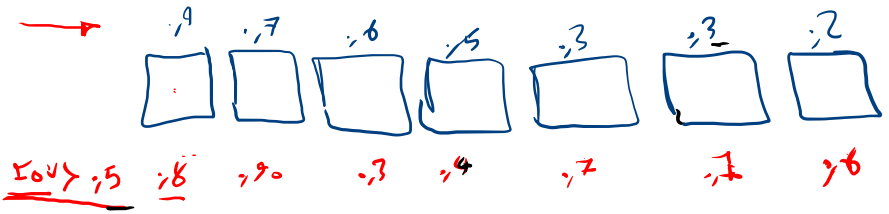
[0, 100]

2. mAP ✓ → mean Average precision. ← Test

→ mAp → تورت مل

MAP



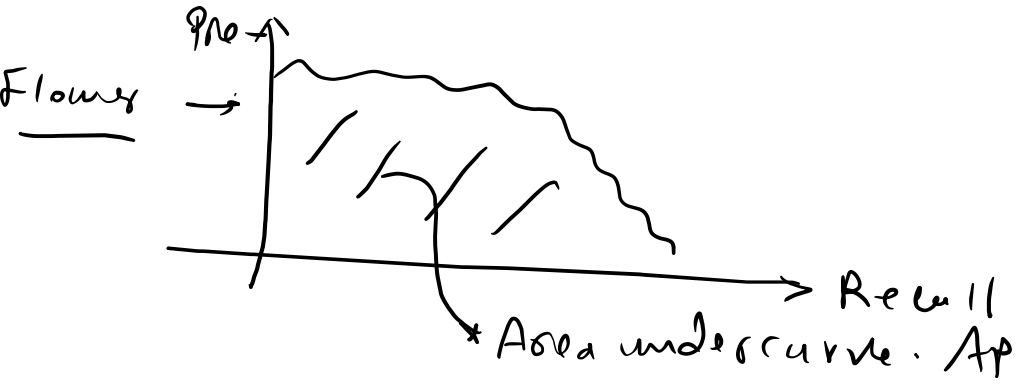


IoU > 0.5 → TP

IoU < 0.5 → FP

FP

TN

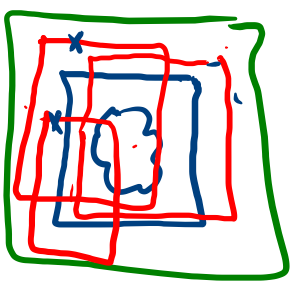


problems → Train : So long.

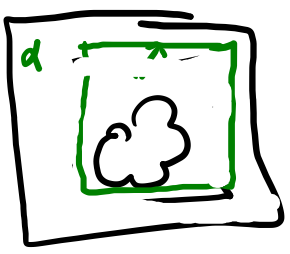
→ Test : ✓

25 From

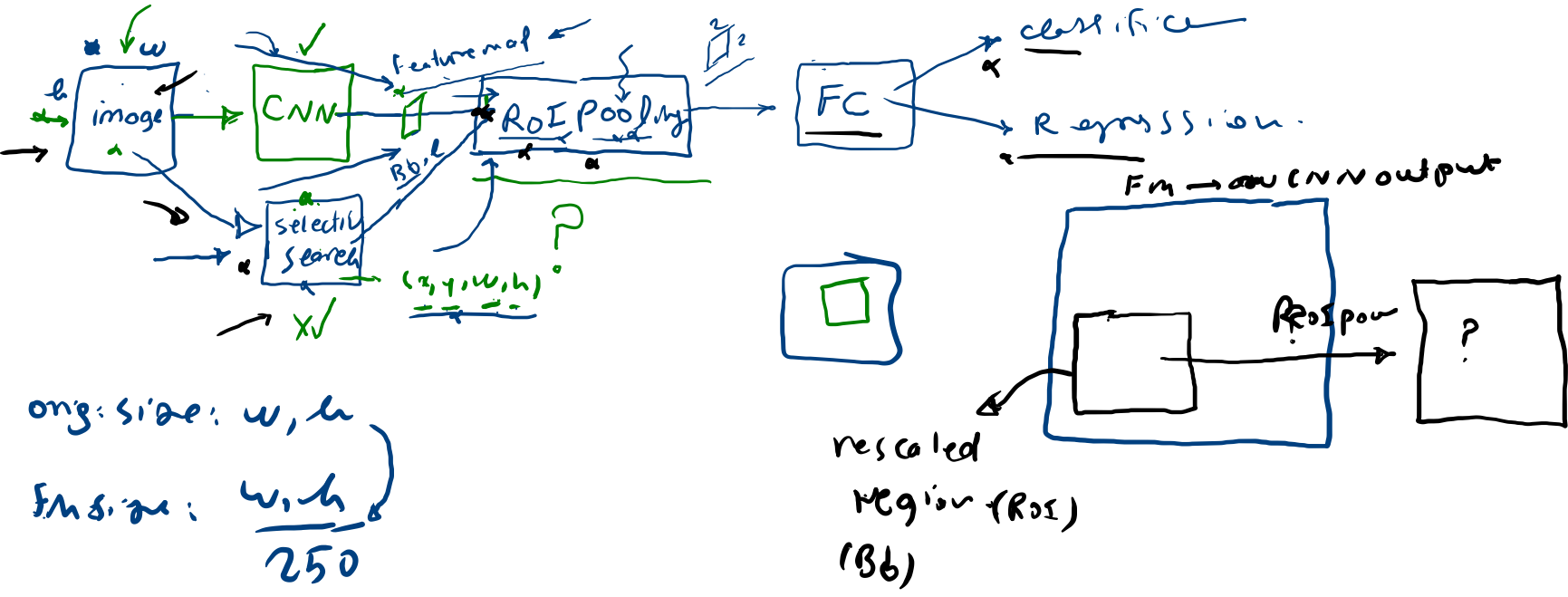
Selective Search



NMS → IOV → ground truth



Fast RCNN



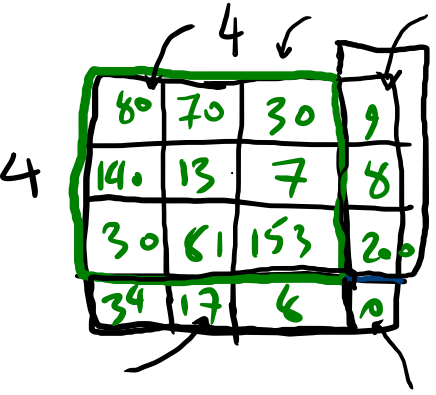
org: size: w, h

fm size: $\frac{w,h}{250}$

output size = 2 x 2

* pooling window: 3 x 3

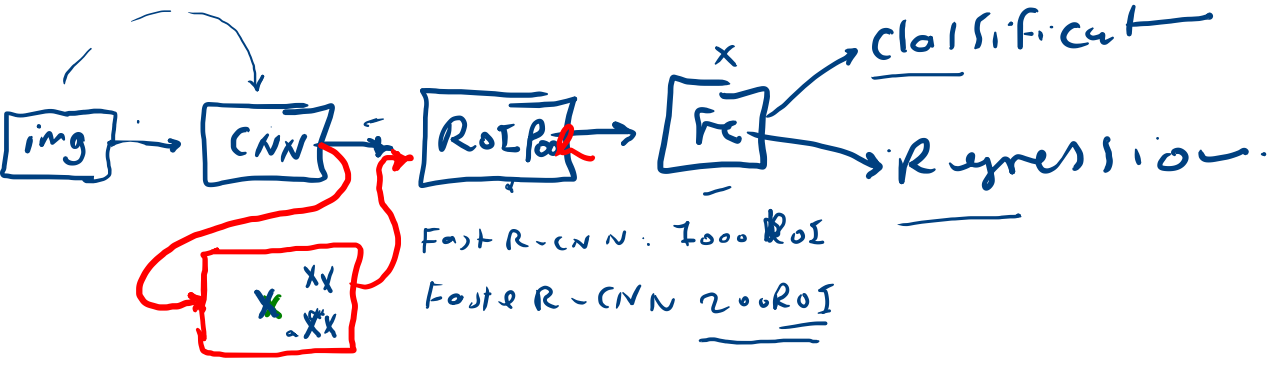
overlap => NO X



CNN output (feature) map

153	200
34	0

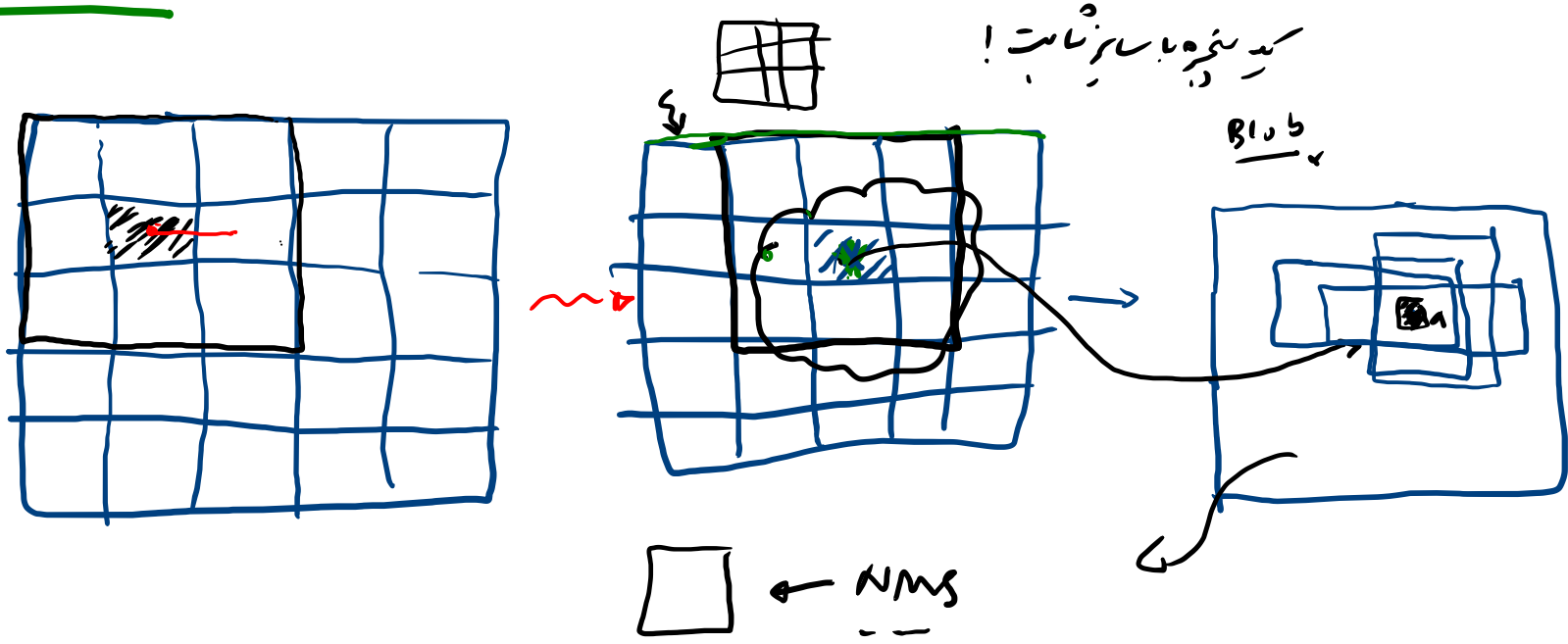
Faster R-CNN


img
CNN
RoI Pool
FC
x
Classificat
Regression
Fast R-CNN: 1000 RoI
Faste R-CNN 200 RoI
Region proposal Network (RPN)

Object detection

RPN :

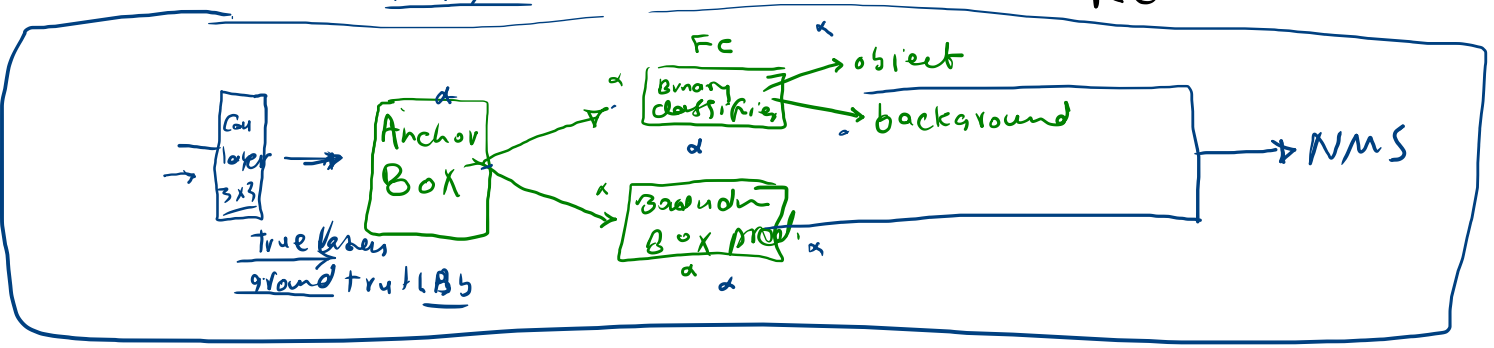
Anchor :

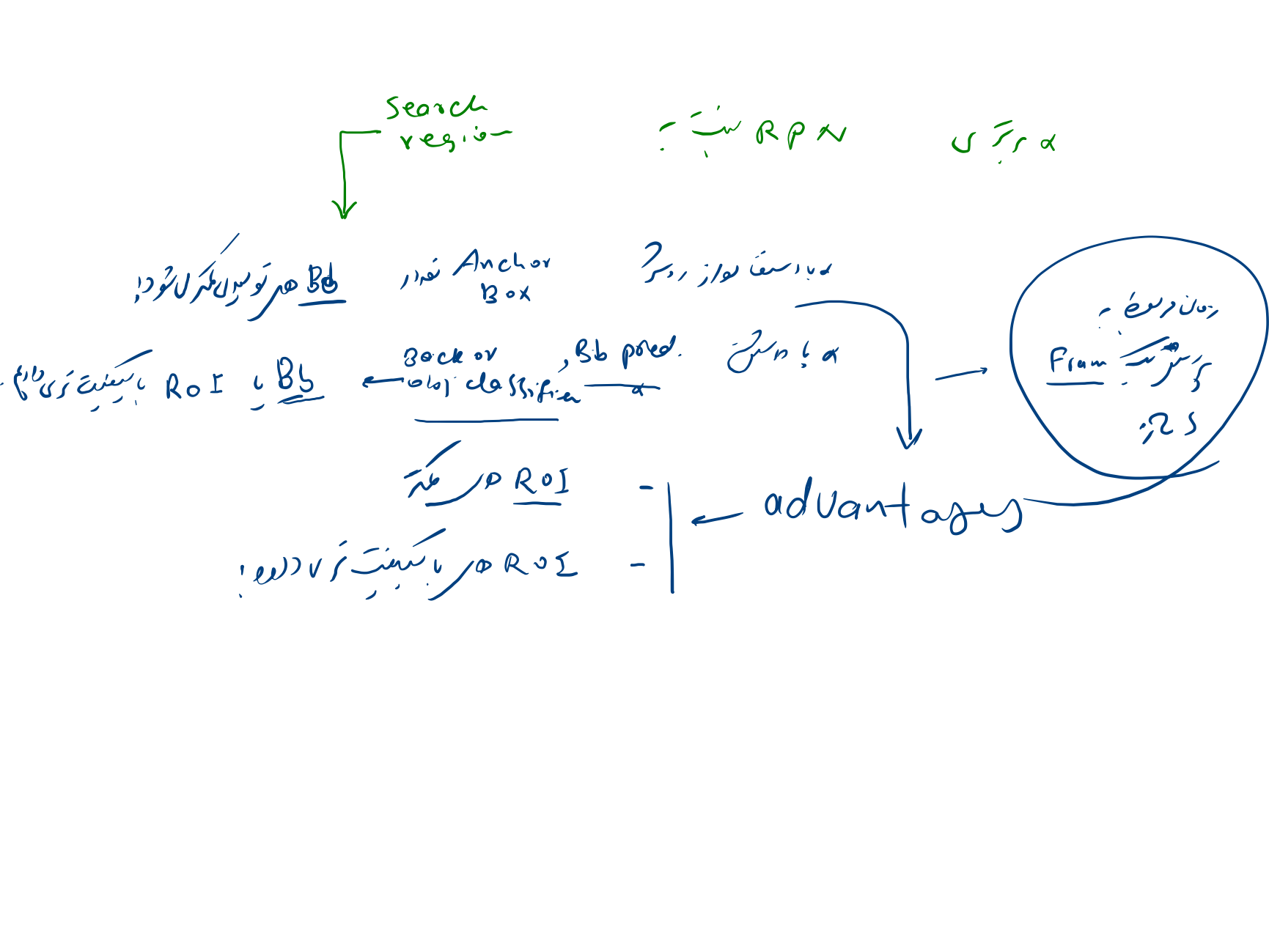


مهم‌ترین تفاوت

Faster RCNN vs Fast RCNN

RPN





Search region

α برتری RPN نسبت به

α با استفاده از روش Anchor Box تعداد Bb های تولیدی کمتر می‌شود!

α با داشتن Bb pred. , Back or Obj classifier ← Bb یا RoI با کیفیت‌تری داریم.

زمان مربوط به پرسش یک Fram ۲۵ ز

advantages

- RoI های کمتر
- RoI های با کیفیت‌تری داریم!

	R-CNN	Fast R CNN	Faster R CNN
PASCAL	66 %	66,9 %	66,9 %
	1X	25X	25,X

The End