

1. 准备工作

1.1 数据下载

1. Download the training, validation, test data and VOCdevkit

```
wget http://host.robots.ox.ac.uk/pascal/VOC/voc2007/VOCtrainval_06-Nov-2007.tar
wget http://host.robots.ox.ac.uk/pascal/VOC/voc2007/VOCtest_06-Nov-2007.tar
wget http://host.robots.ox.ac.uk/pascal/VOC/voc2007/VOCdevkit_08-Jun-2007.tar
```

2. Extract all of these tars into one directory named VOCdevkit

```
tar xvf VOCtrainval_06-Nov-2007.tar
tar xvf VOCtest_06-Nov-2007.tar
tar xvf VOCdevkit_08-Jun-2007.tar
```

3. It should have this basic structure

```
$VOCdevkit/                # development kit
$VOCdevkit/VOCcode/         # VOC utility code
$VOCdevkit/VOC2007          # image sets, annotations, etc.
# ... and several other directories ...
```

4. Create symlinks for the PASCAL VOC dataset

```
cd $FRCN_ROOT/data
ln -s $VOCdevkit VOCdevkit2007
```

Using symlinks is a good idea because you will likely want to share the same PASCAL dataset installation between multiple projects.

1.2 预训练模型下载

ResNet 101 [VT Server](#)

下载完成后把他们放到data/pretrained_model目录下。

1.3 工程编译

进入faster-rcnn.pytorch`目录下，在进入到lib文件夹内：

```
cd lib
python3 setup.py build develop
```

[参考你提供的csdn博客](#)

2. 训练

```
CUDA_VISIBLE_DEVICES=0 python3 trainval_net.py --dataset pascal_voc --net res101 --
epochs 20 --bs 1 --num_workers 4 --lr 1e-2 --lr_decay_step 8 --mGPUs --cuda
```

3. 测试

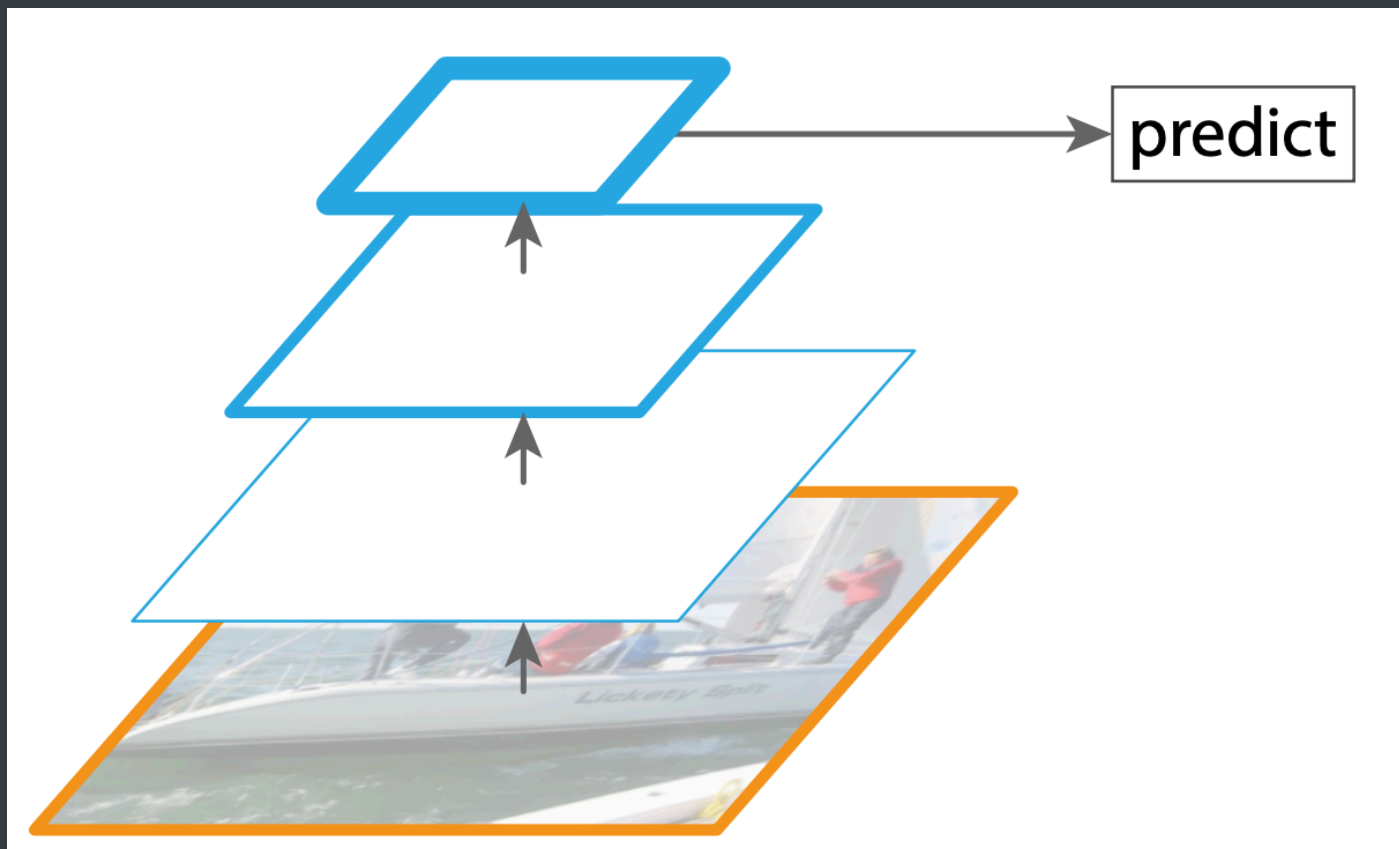
If you want to evaluate the detection performance of a pre-trained res101 model on pascal_voc test set, simply run

```
python3 test_net.py --dataset pascal_voc --net res101 \
                    --checksession $SESSION --checkepoch $EPOCH --checkpoint
$CHECKPOINT \
                    --cuda
```

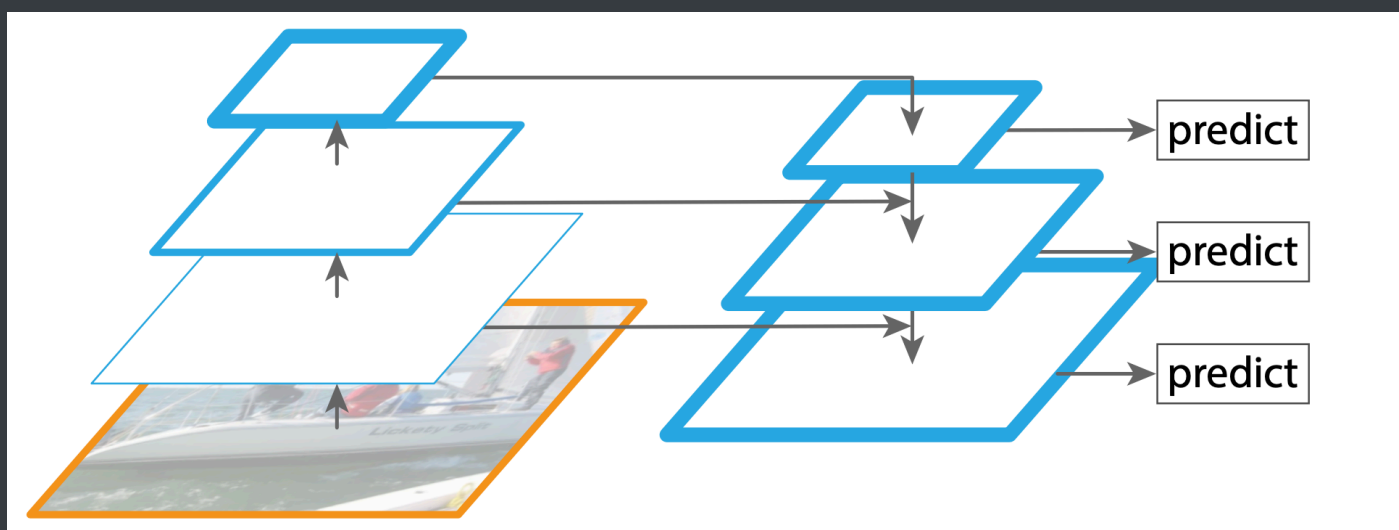
Specify the specific model session, chechepoch and checkpoint, e.g., SESSION=1, EPOCH=6, CHECKPOINT=416.

4. 改动记录

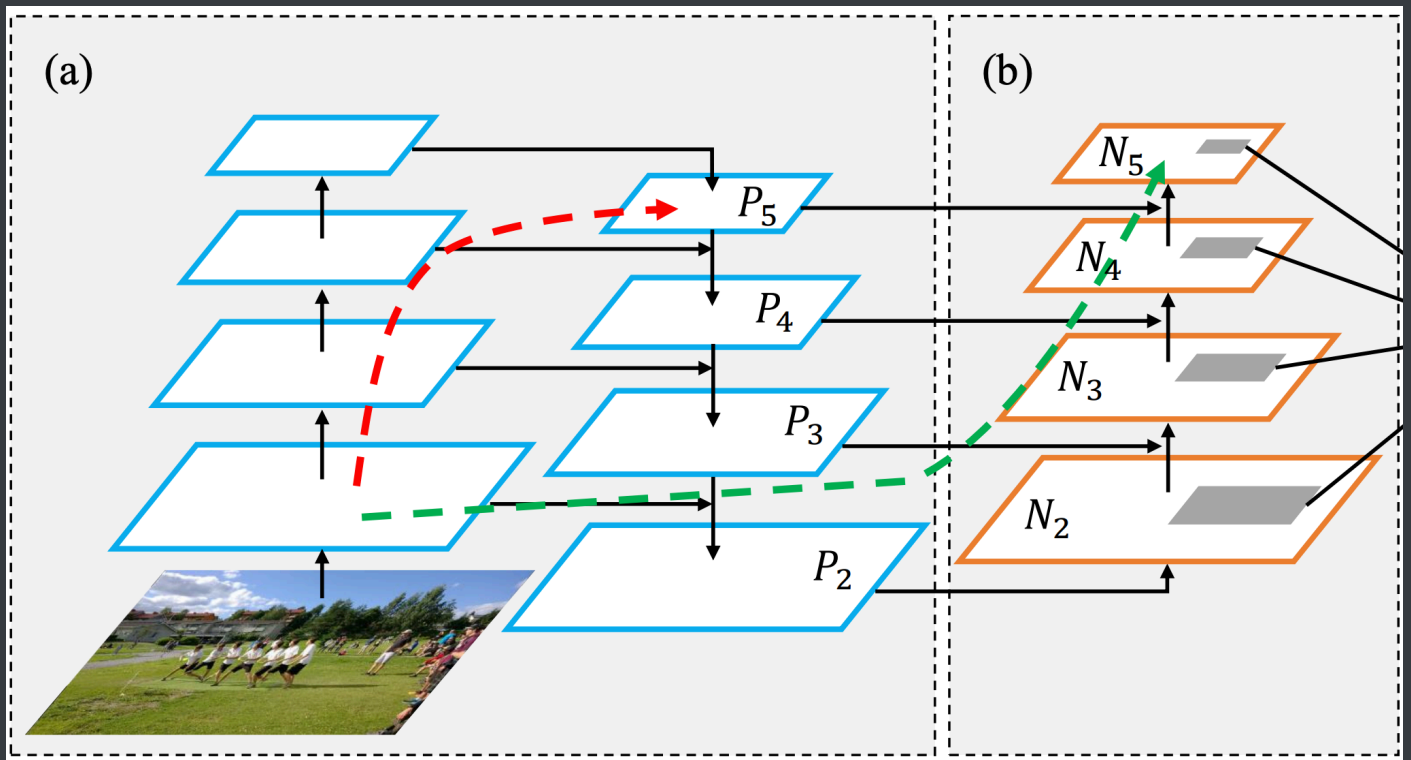
原始的faster rcnn在Backbone的最末端进行目标预测：



FPN结构：在多个尺度进行目标分配和预测：



PANet-FPN结构：



lib/faster_rcnn --> lib/fpn