

# 目标跟踪教学实验

## 实验一： 目标跟踪环境配置代码安装

### Requirments

- Conda with Python 3.7.
- Nvidia GPU.
- PyTorch 0.4.1
- yacs
- pyyaml
- matplotlib
- tqdm
- OpenCV









### 采用代码

<https://github.com/STVIR/pycot>

该代码库支持多种目标跟踪模型的实现，包括 SiamMask，SiamRPN++，SiamFC，SiamRPN 等。

## 实验二： 目标跟踪算法预训练模型下载

### Model Zoo

 模型 (arch + backbone + xcorr)	 VOT16 (EAO / A / R)	 VOT18 (EAO / A / R)	 VOT19 (EAO / A / R)	 OTB2015 (AUC/Prec.)	 VOT18-LT (F1)	 # 速度 (fps)	 网址
<a href="#">siamrpn_alex_dwxcorr</a>	0.393 / 0.618 / 0.238	0.352 / 0.576 / 0.290	0.260 / 0.573 / 0.547	--	--	180	<a href="https://drive.google.com/open?id=1t62x56JI7baUzPTo0QrC4jJnwwPZm-2m">https://drive.google.com/open?id=1t62x56JI7baUzPTo0QrC4jJnwwPZm-2m</a>
<a href="#">siamrpn_alex_dwxcorr_otb</a>	--	--	--	0.666 / 0.876	--	180	<a href="https://drive.google.com/open?id=1gCpmR85Qno3C-naR3SLqRNpVfU7VJ2W0">https://drive.google.com/open?id=1gCpmR85Qno3C-naR3SLqRNpVfU7VJ2W0</a>
<a href="#">siamrpn_r50_l234_dwxcorr</a>	0.464 / 0.642 / 0.196	0.415 / 0.601 / 0.234	0.287 / 0.595 / 0.467	--	--	35	<a href="https://drive.google.com/open?id=1Q4-1563iPwV6wSf_IBHDj5CPFiGSIEPG">https://drive.google.com/open?id=1Q4-1563iPwV6wSf_IBHDj5CPFiGSIEPG</a>
<a href="#">siamrpn_r50_l234_dwxcorr_otb</a>	--	--	--	0.696 / 0.914	--	35	<a href="https://drive.google.com/open?id=1Cx_oHu6o0gNeH7F9zZrgevAGdyWC4D5">https://drive.google.com/open?id=1Cx_oHu6o0gNeH7F9zZrgevAGdyWC4D5</a>
<a href="#">siamrpn_mobilev2_l234_dwxcorr</a>	0.455 / 0.624 / 0.214	0.410 / 0.586 / 0.229	0.292 / 0.580 / 0.446	--	--	75	<a href="https://drive.google.com/open?id=1JB94pZTvB1ZByU-qSJn4ZAlfLWE5EBJ">https://drive.google.com/open?id=1JB94pZTvB1ZByU-qSJn4ZAlfLWE5EBJ</a>
<a href="#">siammask_r50_l3</a>	0.455 / 0.634 / 0.219	0.423 / 0.615 / 0.248	0.283 / 0.597 / 0.461	--	--	56	<a href="https://drive.google.com/open?id=1YbPUQVTYw_slAvk_DchvRY-7B6rnSXP9">https://drive.google.com/open?id=1YbPUQVTYw_slAvk_DchvRY-7B6rnSXP9</a>
<a href="#">siamrpn_r50_l234_dwxcorr_lt</a>	--	--	--	--	0.629	20	<a href="https://drive.google.com/open?id=1IOOTedwGLbGZ7MAbqJimlcET3ANJd29A">https://drive.google.com/open?id=1IOOTedwGLbGZ7MAbqJimlcET3ANJd29A</a>

## 实验三： 使用目标跟踪算法之测试与评估

### 测试

```
cd experiments/siamrpn_r50_l234_dwxcorr
python -u ../../tools/test.py \
  --snapshot model.pth \ # model path
  --dataset VOT2018 \ # dataset name
  --config config.yaml \ # config file
```

### 评估

```
python ../../tools/eval.py \
  --tracker_path ./results \ # result path
  --dataset VOT2018 \ # dataset name
  --num 1 \ # number thread to eval
  --tracker_prefix 'model' \ # tracker_name
```