

Hardware & software: Windows 11, CUDA 11.1, Python 3.7.0

Step 1-4: 和说明一样

Step 5: 遇到编译错误如下

```
Installing terminaltables-3.1.10-py2.py3-none-any.whl to d:\softwares\anaconda3\envs\siamdt\lib\site-packages
D:\Softwares\Anaconda3\envs\SiamDT\lib\site-packages\setuptools\command\install.py:37: SetuptoolsDeprecationWarning: setup.py install is deprecated. Use build and pip and other s
setuptools.SetuptoolsDeprecationWarning,
D:\Softwares\Anaconda3\envs\SiamDT\lib\site-packages\Cython\Compiler\Main.py:381: FutureWarning: Cython directive 'language_level' not set, using '3str' for now (Py3). This has c
! File: C:\Users\1039\AppData\Local\Temp\leasy_install-psdujsa6\mmpycocotools-12.0.3\pycocotools\_mask.pyx
tree = Parsing.p_module(s, pxd, full_module_name)
maskApi.c
c1: fatal error C1083: 无法打开源文件: "../common/maskApi.c": No such file or directory
error: Setup script exited with error: command 'D:\Softwares\VisualStudio1\2019\Community\VC\Tools\MSVC\14.29.30133\bin\HostX86\x64\cl.exe' failed with exit code 2
```

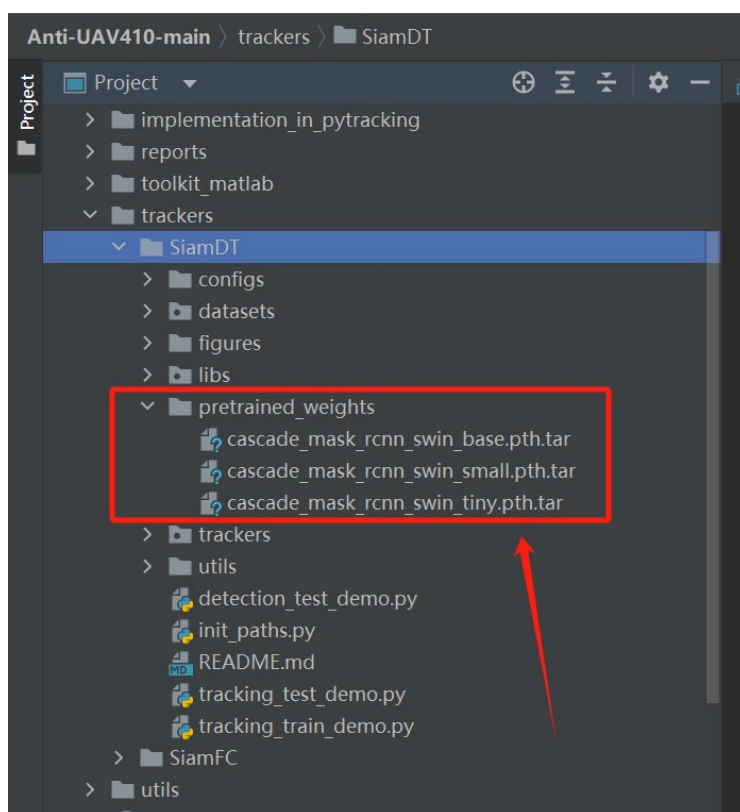
安装低版本的 cython，再编译问题得到解决

pip install cython==0.29.35

python setup.py develop

Step. 6:

下载预训练模型放到如下位置:



Step.7: 训练

1) 更改数据集路径

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if name == 'coco_train':
    return data.COCODetection(subsets='train')
elif name == 'coco_val':
    return data.COCODetection(subsets='val')
elif name == 'got10k_train':
    return data.GOT10k(root_dir='/media/data2/TrackingDatasets/GOT-10k/full_data/train_data', subsets='train')
elif name == 'got10k_val':
    return data.GOT10k(root_dir='/media/data2/TrackingDatasets/GOT-10k/full_data/train_data', subsets='val')
elif name == 'lasot_train':
    return data.LaSOT(root_dir='/media/data2/TrackingDatasets/LaSOT/', subsets='train')
elif name == 'uav410_train':
    return data.UAV410(root_dir='D:/Codes/Datasets/Anti-UAV410', subsets='train')
elif name == 'uav410_val':
    return data.UAV410(root_dir='D:/Codes/Datasets/Anti-UAV410', subsets='val')
elif name == 'imagenet_vid':
    return data.ImageNetVID(subset=['train', 'val'])
elif name == 'visdrone_vid':
    return data.VisDroneVID(subset=['train', 'val'])
else:
    raise KeyError(f'Unknown dataset: {name}')

```

2) 回到 SiamDT 工程路径

cd ../.

3) 训练

python tracking\_train\_demo.py

训练遇到错误如下:

```

(SiamDT) D:\Codes\PyCharm\Anti-UAV410-main\Anti-UAV410-main\trackers\SiamDT>python tracking_train_demo.py
apex is not installed
apex is not installed
apex is not installed
apex is not installed
Traceback (most recent call last):
  File "tracking_train_demo.py", line 237, in <module>
    main()
  File "tracking_train_demo.py", line 174, in main
    cfg.dump(osp.join(cfg.work_dir, osp.basename(args.config)))
  File "D:\Softwares\Anaconda3\envs\SiamDT\lib\site-packages\mimcv\utils\config.py", line 458, in dump
    f.write(self.pretty_text)
  File "D:\Softwares\Anaconda3\envs\SiamDT\lib\site-packages\mimcv\utils\config.py", line 413, in pretty_text
    text, _ = FormatCode(text, style_config=yapf_style, verify=True)
TypeError: FormatCode() got an unexpected keyword argument 'verify'

```

Yapf 版本问题, 安装更低版本的 yapf 即可,

pip install yapf==0.40.1

再次运行训练遇到错误:

```

2024-07-13 12:01:38,413 - mmdet - WARNING - "imgs_per_gpu" is deprecated in MMDet V2.0. Please use "samples_per_gpu" instead
2024-07-13 12:01:38,413 - mmdet - WARNING - Automatically set "samples_per_gpu"="imgs_per_gpu"=1 in this experiments
Traceback (most recent call last):
  File "tracking_train_demo.py", line 237, in <module>
    main()
  File "tracking_train_demo.py", line 233, in main
    meta=meta)
  File "libs/swintransformer\mmdet\apis\train.py", line 84, in train_detector
    model.optimizer = apex.amp.initialize(
NameError: name 'apex' is not defined

```

Apex 没有安装, 安装 Apex

pip install apex

安装 apex 时遇到错误:

```

Building wheel for pbkdf2 (setup.py) ... done
Created wheel for pbkdf2: filename=pbkdf2-1.3-py3-none-any.whl size=5113 sha256=78d5e966bed2fdd6ca3ce52b9c369ebd6e2b0ba65bb8bde0fe78b
Stored in directory: c:\users\al039\appdata\local\pip\cache\wheels\0a\9b\7f\19e16ca13bcf8fac73e4ef1468e2cdf7c2ade835f6e17a45ee
Successfully built apex velruse anykeystore pbkdf2
Failed to build cryptacular
ERROR: Could not build wheels for cryptacular, which is required to install pyproject.toml-based projects

```

选择离线安装 Apex,

cd apex

pip install -v --no-cache-dir --global-option="--cpp\_ext" --global-option="--cuda\_ext" ./

```
byte-compiling D:\Softwares\Anaconda3\envs\SiamDT\Lib\site-packages\apex\__init__.py to __init__.cpy
running install_egg_info
running egg_info
writing manifest file 'apex.egg-info\SOURCES.txt'
Copying apex.egg-info to D:\Softwares\Anaconda3\envs\SiamDT\Lib\site-packages\apex-0.1-py3.7.egg-inf
running install_scripts
writing list of installed files to 'C:\Users\al039\AppData\Local\Temp\pip-record-07kl6rkp\install-re
Running setup.py install for apex: .. done
Successfully installed apex-0.1
Link requires a different Python (3.7.16 not in: '>=3.8'): https://pypi.tuna.tsinghua.edu.cn/package
ps://pypi.tuna.tsinghua.edu.cn/simple/pip/) (requires-python:>=3.8)
Link requires a different Python (3.7.16 not in: '>=3.8'): https://pypi.tuna.tsinghua.edu.cn/package
tps://pypi.tuna.tsinghua.edu.cn/simple/pip/) (requires-python:>=3.8)
```

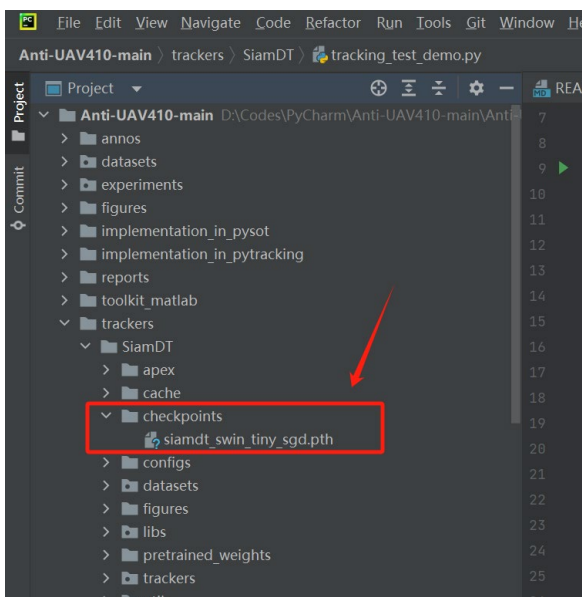
再次训练成功: (missing keys 不用管)

```
Terminal: Local < + v
2024-07-13 12:23:22,035 - mmdet - INFO - Use load_from_local loader
2024-07-13 12:23:22,110 - mmdet - WARNING - The model and loaded state dict do not match exactly
missing keys in source state_dict: rpn_head.rpn_conv.weight, rpn_head.rpn_conv.bias, rpn_head.rpn_cls.weight, rpn_head.rpn_cls.bias, rpn_head.rpn_cls.fc_reg.weight, rpn_head.rpn_cls.fc_reg.bias, rpn_head.bbox_head.fc_reg.weight, rpn_head.bbox_head.fc_reg.bias, rpn_head.bbox_head.shared_fc
ared_fcs.1.weight, roi_head.bbox_head.shared_fcs.1.bias, rpn_similarity_learning.proj_query.0.weight, rpn_similarity_learning.proj_query.0.bias, rpn_similarity_learning.proj_query.1.weight, rpn_similarity_learning.proj_query.1.bias, rpn_similarity_learning.proj_query.2.weight, rpn_similarity_learning.proj_query.2.bias, rpn_similarity_learning.proj_query.3.weight, rpn_similarity_learning.proj_query.3.bias, rpn_similarity_learning.proj_query.4.weight, rpn_similarity_learning.proj_query.4.bias, rpn_similarity_learning.proj_out.0.weight, rpn_similarity_learning.proj_out.0.bias, rpn_similarity_learning.proj_out.1.weight, rpn_similarity_learning.proj_out.1.bias, rpn_similarity_learning.proj_out.2.weight, rpn_similarity_learning.proj_out.2.bias, rpn_similarity_learning.proj_out.3.weight, rpn_similarity_learning.proj_out.3.bias, rpn_similarity_learning.proj_out.4.weight, rpn_similarity_learning.proj_out.4.bias, rcnn_similarity_learning.proj_z.weight, rcnn_similarity_learning.proj_z.bias, rcnn_similarity_learning.proj_x.weight, rcnn_similarity_learning.proj_x.bias, rcnn_similarity_learning.proj_out.weight, rcnn_similarity_learning.proj_out.bias
2024-07-13 12:23:22,118 - mmdet - INFO - Start running, host: al039@HuangBo, work_dir: D:\Codes\PyCharm\Anti-UAV410-main\Anti-UAV410-main
2024-07-13 12:23:22,118 - mmdet - INFO - workflow: [('train', 1)], max: 12 epochs
Gradient overflow. Skipping step, loss scaler 0 reducing loss scale to 32768.0
2024-07-13 12:23:48,736 - mmdet - INFO - Epoch [1][50/2000] lr: 1.978e-04, eta: 3:32:26, time: 0.532, data_time: 0.140, memory: 433198.4844, loss_bbox: 0.0160, loss: 0.9682
```

这里的missing keys不用管它

### Step 8. 测试

1) 下载训练好的模型放到如下位置:



## 2) 更改数据集路径

```
7 # python tracking_test_demo.py
8
9 if __name__ == '__main__':
10     cfg_file = 'configs/siamdt_swin_tiny_sgd.py'
11     ckp_file = 'checkpoints/siamdt_swin_tiny_sgd.pth'
12     name_suffix = cfg_file[8:-3]
13     visualize = False
14     # selected_seq='02_6321_0274-2773'
15     selected_seq = 'ALL'
16
17     transforms = data.BasicPairTransforms(train=False)
18     tracker = SiamDTTracker(
19         cfg_file, ckp_file, transforms,
20         name_suffix=name_suffix, visualize=visualize)
21
22     evaluators = [
23         data.EvaluatorUAVtir(root_dir='D:/Codes/Datasets/Anti-UAV410', subset='test')]
24
25     for e in evaluators:
26         e.run(tracker, selected_seq=selected_seq)
27
28 if name == 'main'
```

## 3) 测试

测试成功

```
(SiamDT) D:\Codes\PyCharm\Anti-UAV410-main\Anti-UAV410-main\trackers\SiamDT>python tracking_test_demo.py
Use load_from_local loader
Running tracker siamdt_swin_tiny_sgd on UAVtir_test...
```