

2022AAAI_CGPS弱监督 (实验记录)

[CGPS/install.md at main · ljpadam/CGPS \(github.com\)](#)

概述

项目需要配置mmdet1.2.6版本，batch为5，显存占用24G，**PRW数据集**训练一次实验比较快大约24小时，测试20分钟得到精度结果。

1.配置环境

1.1原本环境

Python	PyTorch	CUDA	GCC	mmcv	mmdet
3.6+	1.7.1	9.2+	5+	1.2.6	2.4.0

1.2复现环境(linux)

1.2.1学院服务器(Tsla P100)

G19940018

名字	cuda	torch	python	mmcv	mmdet
csj	9.2	1.7.1	3.7	1.2.0	2.8.0

1.cuda版本确定

```
# CUDA 9.2
conda install pytorch==1.7.1 torchvision==0.8.2 torchaudio==0.7.2 cudatoolkit=9.2
-c pytorch
```

2.安装mmcvfull

mmcvfull是mmcv(GPU)的老版本

```
pip install mmcv-full==1.2.6 -f
https://download.openmmlab.com/mmcv/dist/cu92/torch1.7/index.html
```

3.安装mmdetection,保证mmcv1.2.0b不变，mmdet只有2.8.0才可以

```
pip install mmdet==2.8.0
```

版本对应与mmcv:

MMDetection version	MMCV version
master	mmcv-full>=1.1.1, <=1.2
2.4.0	mmcv-full>=1.1.1, <=1.2
2.3.0	mmcv-full==1.0.5
2.3.0rc0	mmcv-full>=1.0.2
2.2.1	mmcv==0.6.2
2.2.0	mmcv==0.6.2
2.1.0	mmcv>=0.5.9, <=0.6.1
2.0.0	mmcv>=0.5.1, <=0.5.8

下面的表对应不对,mmcv==1.2.6不让装mmcv2.4.0

MMDetection 版本	MMCV 版本
master	mmcv-full>=1.3.8, <1.4.0
2.14.0	mmcv-full>=1.3.8, <1.4.0
2.13.0	mmcv-full>=1.3.3, <1.4.0
2.12.0	mmcv-full>=1.3.3, <1.4.0
2.11.0	mmcv-full>=1.2.4, <1.4.0
2.10.0	mmcv-full>=1.2.4, <1.4.0
2.9.0	mmcv-full>=1.2.4, <1.4.0
2.8.0	mmcv-full>=1.2.4, <1.4.0
2.7.0	mmcv-full>=1.1.5, <1.4.0
2.6.0	mmcv-full>=1.1.5, <1.4.0
2.5.0	mmcv-full>=1.1.5, <1.4.0
2.4.0	mmcv-full>=1.1.1, <1.4.0
2.3.0	mmcv-full==1.0.5
2.3.0rc0	mmcv-full>=1.0.2
2.2.1	mmcv==0.6.2
2.2.0	mmcv==0.6.2
2.1.0	mmcv>=0.5.9, <=0.6.1
2.0.0	mmcv>=0.5.1, <=0.5.8

报错

```
AttributeError: module 'pycocotools' has no attribute '__version__'
```

解决:

1.先卸载

```
pip uninstall pycocotools
```

2.会出现

```
ModuleNotFoundError: No module named 'pycocotools'
```

3.在卸载

```
pip uninstall mmpycocotools
```

4.重新安装

```
pip install mmpycocotools
```

如图所示:

```
(csj) [G19940018@admin1 ~]$ pip uninstall mmpycocotools
Found existing installation: mmpycocotools 12.0.3
Uninstalling mmpycocotools-12.0.3:
  Would remove:
    /public/home/G19940018/anaconda3/envs/csj/lib/python3.7/site-packages/mmpyc
Proceed (Y/n)? y
  Successfully uninstalled mmpycocotools-12.0.3
(csj) [G19940018@admin1 ~]$ pip install mmpycocotools
Looking in indexes: https://pypi.tuna.tsinghua.edu.cn/simple
Collecting mmpycocotools
  Using cached mmpycocotools-12.0.3-cp37-cp37m-linux_x86_64.whl
Requirement already satisfied: setuptools>=18.0 in ./anaconda3/envs/csj/lib/pyt
Requirement already satisfied: matplotlib>=2.1.0 in ./anaconda3/envs/csj/lib/py
Requirement already satisfied: cython>=0.27.3 in ./anaconda3/envs/csj/lib/pytho
Requirement already satisfied: pillow>=6.2.0 in ./anaconda3/envs/csj/lib/pytho
Requirement already satisfied: pyparsing>=2.2.1 in ./anaconda3/envs/csj/lib/pyt
Requirement already satisfied: numpy>=1.16 in ./anaconda3/envs/csj/lib/python3.
Requirement already satisfied: cycler>=0.10 in ./anaconda3/envs/csj/lib/python3
Requirement already satisfied: kiwisolver>=1.0.1 in ./anaconda3/envs/csj/lib/py
Requirement already satisfied: python-dateutil>=2.7 in ./anaconda3/envs/csj/lib
Requirement already satisfied: six in ./anaconda3/envs/csj/lib/python3.7/site-p
Installing collected packages: mmpycocotools
Successfully installed mmpycocotools-12.0.3
(csj) [G19940018@admin1 ~]$
```

报错

```
ModuleNotFoundError: No module named 'faiss'
```

解决:

```
conda install faiss-gpu cudatoolkit=9.2 -c pytorch
```

报错

```
ModuleNotFoundError: No module named '_swigfaiss'
```

解决:

```
pip install faiss-gpu
```

报错: 调整 `mmcv` 和 `yapf` 的版本匹配

```
Traceback (most recent call last):
  File "tools/train.py", line 177, in <module>
    main()
  File "tools/train.py", line 121, in main
    cfg.dump(osp.join(cfg.work_dir, osp.basename(args.config)))
  File "/public/home/G19940018/anaconda3/envs/csj/lib/python3.7/site-packages/mmcv/utils/config.py", line 432, in dump
    f.write(self.pretty_text)
  File "/public/home/G19940018/anaconda3/envs/csj/lib/python3.7/site-packages/mmcv/utils/config.py", line 387, in pretty_text
    text, _ = FormatCode(text, style_config=yapf_style, verify=True)
TypeError: FormatCode() got an unexpected keyword argument 'verify'
```

解决: 重新装

```
pip install yapf==0.40.1
```

报错

```
AttributeError: module 'faiss' has no attribute 'cast_integer_to_long_ptr'
```

解决: `faiss-gpu==1.6.4`

```
pip install --ignore-installed faiss-gpu==1.6.5 -i
https://pypi.douban.com/simple/
```

```
pip install faiss-gpu==1.6.5
```

当配置`faiss-gpu==1.6.5`时

报错:

```
AttributeError: module 'faiss' has no attribute 'cast_integer_to_long_ptr'
```

解决:

[An error occurred when creating a pseudo label · Issue #22 · yxgeee/SpCL · GitHub](#)

在`faiss_utils.py`代码里把 `cast_integer_to_long_ptr` 替换成 `cast_integer_to_idx_t_ptr` 就可以了

```
import faiss
import torch

def swig_ptr_from_FloatTensor(x):
    assert x.is_contiguous()
    assert x.dtype == torch.float32
    return faiss.cast_integer_to_float_ptr(
        x.storage().data_ptr() + x.storage_offset() * 4
    )

def swig_ptr_from_LongTensor(x):
    assert x.is_contiguous()
    assert x.dtype == torch.int64, "dtype=%s" % x.dtype
    return faiss.cast_integer_to_idx_t_ptr(
        x.storage().data_ptr() + x.storage_offset() * 8
    )

def search_index_pytorch(index, x, k, D=None, I=None):
    """call the search function of an index with pytorch tensor I/O (CPU
    and GPU supported)"""
    assert x.is_contiguous()
    n, d = x.size()
    assert d == index.d
```

1.2.2台式机电脑 (3090ti-ubuntu)

3090ti cuda版本下限为11.0

环境名	python	cuda	torch	mmcv-full	mmdet
chai	3.7	11.0	1.7.1	1.2.6	2.4.0

创建环境

```
conda create -n chai python=3.7
```

安装pytorch

```
# CUDA 11.0
conda install pytorch==1.7.1 torchvision==0.8.2 torchaudio==0.7.2
                cudatoolkit=11.0 -c pytorch
```

安装mmcv

```
pip install openmim
mim install mmcv-full==1.2.6
```

安装mmdet

```
python setup.py develop
```

其他环境(安装mmpycocotools前必须安装cython)

```
pip3 install cython==0.29.33 -i http://mirrors.aliyun.com/pypi/simple/ --trusted-host mirrors.aliyun.com
```

```
pip install mmpycocotools
```

```
pip install yapf==0.40.1
```

```
pip install faiss-gpu==1.6.5
```

```
pip install scikit-learn
```

在faiss_utils.py代码里把 cast_integer_to_long_ptr 替换成 **cast_integer_to_idx_t_ptr** 就可以了

路径注意：ubuntu系统的根目录是从/home/用户名/桌面开始的

2.训练

2.0原论文精度

workers_per_gpu=4,sampers_per_gpu=4

1. Train

```
cd jobs/cuhk/
sh train.sh
```

1. Test CUHK-SYSU Download trained CUHK [checkpoint](#).

```
cd jobs/cuhk/
sh test.sh
```

1. Train PRW

```
cd jobs/prw/
sh train.sh
```

1. Test PRW Download trained PRW [checkpoint](#). Change the paths in L125 in [test_results_prw.py](#)

```
cd jobs/prw
sh test.sh
```

数据	型	地图	排名1	配置	链接
香港中文大学-中山大学	CGPS	80.1%	82.1%	cfg	型
PRW	CGPS	16.6%	68.2%	cfg	型

2.1改分布式训练

修改dist_train.sh

参数说明

- `CUDA_VISIBLE_DEVICES=0,1`: 指定只使用 GPU 0 和 GPU 1。
- `--nproc_per_node=2`: 启动两个进程，每个进程绑定一个 GPU。

```
#!/usr/bin/env bash

#指定训练配置文件
# CONFIG=$1
CONFIG=/public/home/G19940018/Group/csj/projects/CGPS-main/configs/cgps/cuhk.py
#指定使用的 GPU 数量
# GPUS=$2
GPUS=2
#通信端口，默认值为 29500
PORT=${PORT:-29500}

# PYTHONPATH="$(dirname $0)/..":$PYTHONPATH \
# python -m torch.distributed.launch --nproc_per_node=$GPUS --master_port=$PORT \
#     $(dirname "$0")/train.py $CONFIG --launcher pytorch ${@:3}
PYTHONPATH="/public/home/G19940018/Group/csj/projects/CGPS-main":$PYTHONPATH \
python -m torch.distributed.launch --nproc_per_node=$GPUS --master_port=$PORT \
    /public/home/G19940018/Group/csj/projects/CGPS-main/tools/train.py $CONFIG -
-launcher pytorch
```

```
CUDA_VISIBLE_DEVICES=1,3 sh dist_train.sh 2>&1 | tee
/public/home/G19940018/Group/csj/projects/CGPS-main/logs/sysu/train_log.txt
```

1.报错:分布式训练的非零退出状态问题

```
subprocess.CallProcessError: Command
['/public/home/G19940018/anaconda3/envs/csj/bin/python', '-u',
'/public/home/G19940018/Group/csj/projects/CGPS-main/tools/train.py', '--
local_rank=1', '/public/home/G19940018/Group/csj/projects/CGPS-
main/configs/cgps/cuhk.py', '--launcher', 'pytorch'] returned non-zero exit
status 1.
```

1.1没有解决: 在 DistributedDataParallel 改为true

```
find_unused_parameters=True
```

```
72
73     # put model on gpus
74     if distributed:
75         find_unused_parameters = cfg.get('find_unused_parameters', True)
76         # Sets the `find_unused_parameters` parameter in
77         # torch.nn.parallel.DistributedDataParallel
78         model = MMDistributedDataParallel(
79             model.cuda(),
80             device_ids=[torch.cuda.current_device()],
```

1.2没有解决: **减少每个GPU上的进程数**: workers_per_gpu由4变2 (samplers_per_gpu为4, 两个卡)

2.2复现-降低batch

SYSU

训练(30h)

```
workers_per_gpu=3,samplers_per_gpu=3,
```

2	Tesla P100-PCIE...	Off	00000000:86:00.0 Off	0
N/A	50C	P0	64W / 250W	13487MiB / 16280MiB
				11%
				Default

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CGPS-main/configs/cgps/cuhk.py --
work-dir /public/home/G19940018/Group/csj/projects/CGPS-main/work_dirs/prw_1213
2>&1 | tee /public/home/G19940018/Group/csj/projects/CGPS-
main/logs/sysu/train_b4_log.txt
```

测试(60min)

1	Tesla P100-PCIE...	Off	00000000:3B:00.0 Off	0
N/A	59C	P0	181W / 250W	3013MiB / 16280MiB
				92%
				Default

```
CUDA_VISIBLE_DEVICES=1 python -u
/public/home/G19940018/Group/csj/projects/CGPS-main/tools/test_personsearch.py
/public/home/G19940018/Group/csj/projects/CGPS-main/configs/cgps/cuhk.py
/public/home/G19940018/Group/csj/projects/CGPS-main/work_dirs/cuhk/latest.pth --
eval bbox >>logs/sysu/result_latest.txt 2>&1
```



```
labels = valid_mask.nonzero()[0, 1]
```

All detection:

Recall = 91.92%

AP = 85.64%

Labeled only detection:

Recall = 99.40%

Search ranking:

mAP = 79.64%

Top- 1 = 81.76%

Top- 5 = 92.17%

Top-10 = 94.72%

PRW

训练(24h)

workers_per_gpu=3,samplers_per_gpu=3,

0	Tesla P100-PCIE...	Off		00000000:18:00.0	Off		0
N/A	50C	P0		15827MiB / 250W	15827MiB / 16280MiB		100% Default

```
CUDA_VISIBLE_DEVICES=0 python tools/train.py
/public/home/G19940018/Group/csj/projects/CGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CGPS-main/work_dirs/prw_DICL 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CGPS-
main/logs/prw/train_prw_DIC_log.txt
```

测试(20min)

修改1:

```
test_results_prw.py
```

```
124
● 125 data_root='/public/home/G19940018/Group/csj/data/PRW/'
126 probe_set = load_probes(data_root)
```

报错:

```
Traceback (most recent call last):
  File "../../tools/test_results_prw.py", line 306, in <module>
    main(det_thresh=0.5)
  File "../../tools/test_results_prw.py", line 134, in main
    with open(os.path.join(results_path, 'results_1000.pkl'), 'rb') as fid:
FileNotFoundError: [Errno 2] No such file or directory: './results_1000.pkl'
```

修改2:

```
chmod +x ../../tools/dist_test.sh
```

```
2024-12-13 13:03:14.633 - mmdet - INFO - Saving checkpoint at 24 epochs
(csj) [G19940018@gpul CCGPS-main]$ cd /public/home/G19940018/Group/csj/projects/CCGPS-main/jobs/prw
(csj) [G19940018@gpul prw]$ cd /public/home/G19940018/Group/csj/projects/CCGPS-main/jobs/prw
(csj) [G19940018@gpul prw]$ ls -l ../../tools/dist_test.sh
-rw-r--r-- 1 G19940018 users 272 Dec 13 14:37 ../../tools/dist_test.sh
(csj) [G19940018@gpul prw]$ chmod +x ../../tools/dist_test.sh
(csj) [G19940018@gpul prw]$ ls -l ../../tools/dist_test.sh
-rwxr-xr-x 1 G19940018 users 272 Dec 13 14:37 ../../tools/dist_test.sh
(csj) [G19940018@gpul prw]$
gpul 3.10.0 1:G19940018@gpul:~/Group/csj/projects/CCGPS-main/jobs/prw*
ssh://G19940018@172.19.163.186:22
```

```
cd jobs/prw
sh test.sh
```

```
not detected c3s2_128219.jpg 0.33333332
not detected c3s2_128219.jpg 0.2658625
not detected c3s2_128219.jpg 0.25600716
not detected c5s2_130949.jpg 0.4880402
search ranking:
mAP = 16.15%
top- 1 = 67.19%
top- 5 = 80.41%
top-10 = 84.35%
```

3.实验

PRW数据集

通道注意力模块/ 空间注意力模块

csj1: x+CBAM

NVIDIA-SMI 410.48				Driver Version: 410.48			
GPU Name		Persistence-M		Bus-Id	Disp.A	Volatile Uncorr. ECC	
Fan	Temp	Perf	Pwr:Usage/Cap	Memory-Usage		GPU-Util	Compute M.
0	Tesla P100-PCIE...	Off	00000000:18:00.0 Off	0		0	
N/A	53C	P0	206W / 250W	15167MiB / 16280MiB		100%	Default

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_3_log.txt
```

测试

```
cd jobs/prw
sh test.sh
```

chai1

workers_per_gpu=3,sampers_per_gpu=3;

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_2 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_2_log.txt
```

```
not detected c3s2_128219.jpg 0.24860433
not detected c5s2_130949.jpg 0.32834285
search ranking:
  mAP = 15.59%
  top- 1 = 67.43%
  top- 5 = 80.41%
  top-10 = 84.49%
```

chai3;显存爆炸

workers_per_gpu=3,sampers_per_gpu=3,

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3+- 2>&1
| tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_2_3+-_log.txt
```

0	Tesla P100-PCIE...	Off	00000000:18:00:0	Off	0
N/A	52C	P0	168W / 250W	15827MiB / 16280MiB	94% Default

chai3;显存爆炸

workers_per_gpu=3,sampers_per_gpu=3,

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3+ 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_3+_log.txt
```

0	Tesla P100-PCIE...	Off	00000000:18:00:0	Off	0
N/A	43C	P0	122W / 250W	12901MiB / 16280MiB	100% Default

0	Tesla P100-PCIE...	Off	00000000:18:00:0	Off	0
N/A	48C	P0	176W / 250W	15827MiB / 16280MiB	20% Default

chai4濒临爆炸

workers_per_gpu=3,sampers_per_gpu=3,

```
CUDA_VISIBLE_DEVICES=3 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_3+- 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CCGPS-main/logs/prw/train_prw_3+-
_log.txt
```

3	Tesla P100-PCIE...	Off	00000000:AF:00.0	Off	0
N/A	54C	P0	146W / 250W	14715MiB / 16280MiB	100% Default

not detected c3s2_128219.jpg 0.40043427

not detected c5s2_130949.jpg 0.49244693

search ranking:

mAP = 16.49%

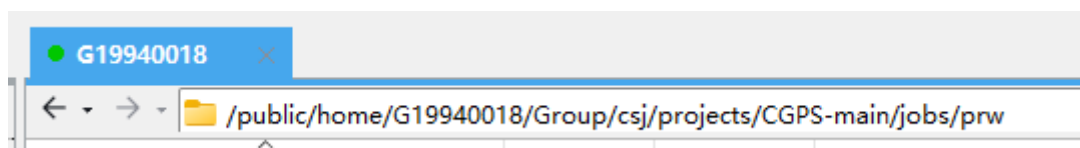
top- 1 = 68.21%

top- 5 = 81.48%

top-10 = 84.78%

chai4

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_1217 2>&1
| tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_1217_log.txt
```



not detected c3s2_128219.jpg 0.26899463

not detected c3s2_128219.jpg 0.25766554

not detected c5s2_130949.jpg 0.49107468

search ranking:

mAP = 16.83%

top- 1 = 67.82%

top- 5 = 80.70%

top-10 = 84.59%

chai2++

workers_per_gpu=3,sampers_per_gpu=3

```
CUDA_VISIBLE_DEVICES=2 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_3_17415
2>&1 | tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_17415_log.txt
```

```
2024-12-13 01:01:32,081 - mmdet - INFO - pseudo label range: tensor(0
2024-12-13 01:01:32,081 - mmdet - INFO - Finished updating pseudo lab
Computing jaccard distance...
Jaccard distance computing time cost: 24.64483380317688
adopt the reliability criterion for filtering clusters
10083 10083
347 clusters, 11572 un-clustered instances, 0 unused instances
```

2	Tesla P100-PCIE...	Off		00000000:86:00.0	Off		0		
N/A	44C	P0		210W / 250W		11971MiB / 16280MiB		92%	Default

```
347 clusters, 11572 un-clustered instances, 0 unused instances
/public/home/G19940018/Group/csj/projects/CCGPS-main/mmdet/models/utils/hybrid_memory_loss.py:269: UserWarning: torch.range is deprecated and will be removed in a future relea
se because its behavior is inconsistent with Python's range builtin. Instead, use torch.arange, which produces values in [start, end).
  min_values = sorted(torch.range(0, sorted.shape[0]-1).long(), sorted_cum_min_indices)
2024-12-13 01:02:14,224 - mmdet - INFO - Epoch [1][50/1834] lr: 2.675e-05, eta: 19:59:29, time: 1.637, data_time: 0.851, memory: 8097, loss_rpn_cls: 0.7115, loss_rpn_bbox:
0.0458, loss_cls: 0.7938, acc: 66.8281, loss_bbox: 0.1156, loss_id: 4.7614, loss_triplet: 0.2464, loss: 6.6744, grad_norm: 311.6530
```

2	Tesla P100-PCIE...	Off		00000000:86:00.0	Off		0		
N/A	48C	P0		135W / 250W		13165MiB / 16280MiB		100%	Default

```
/public/home/G19940018/Group/csj/projects/CCGPS-main/mmdet/models/utils/hybrid_memory_loss.py:269: UserWarning: torch.range is deprecated and will be removed in a future relea
se because its behavior is inconsistent with Python's range builtin. Instead, use torch.arange, which produces values in [start, end).
  min_values = sorted(torch.range(0, sorted.shape[0]-1).long(), sorted_cum_min_indices)
2024-12-13 01:02:50,921 - mmdet - INFO - Epoch [1][100/1834] lr: 4.894e-05, eta: 14:27:39, time: 0.734, data_time: 0.009, memory: 8097, loss_rpn_cls: 0.7105, loss_rpn_bbox:
0.0384, loss_cls: 0.4324, acc: 85.8406, loss_bbox: 0.1357, loss_id: 4.7018, loss_triplet: 0.2457, loss: 6.2644, grad_norm: 349.0937
2024-12-13 01:03:26,955 - mmdet - INFO - Epoch [1][150/1834] lr: 7.113e-05, eta: 12:33:36, time: 0.721, data_time: 0.009, memory: 8097, loss_rpn_cls: 0.7074, loss_rpn_bbox:
0.0467, loss_cls: 0.3483, acc: 91.3281, loss_bbox: 0.1247, loss_id: 5.2359, loss_triplet: 0.2793, loss: 6.7423, grad_norm: 357.4244
```

2	Tesla P100-PCIE...	Off		00000000:86:00.0	Off		0		
N/A	51C	P0		189W / 250W		13165MiB / 16280MiB		72%	Default

```
not detected c3s2_128219.jpg 0.4000794
not detected c5s2_130949.jpg 0.26170543
search ranking:
mAP = 16.84%
top- 1 = 68.74%
top- 5 = 81.09%
top-10 = 85.17%
```

Label Propagation

chai+++

workers_per_gpu=3,sampers_per_gpu=3,

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_batch3_log.txt
```

```

/public/home/G19940018/Group/csj/projects/CCGPS-main/mmdet/models/utils/hybrid_memory_loss.py:269: UserWarning: torch.range is deprecated and will be removed in a future release because its behavior is inconsistent with Python's range builtin. Instead, use torch.arange, which produces values in [start, end).
  min_values = sorted(torch.range(0, sorted.shape[0]-1).long(), sorted_cum_min_indices)
2024-12-13 00:46:05.731 - mmdet - INFO - Epoch [1][50/1902]   lr: 2.675e-05, eta: 21:19:50, time: 1.684, data time: 0.925, memory: 7812, loss_rpn_cls: 0.6816, loss_rpn_bbox: 0.0546, loss_cls: 1.3862, acc: 48.1146, loss_bbox: 0.1069, loss_id: 5.0384, loss_triplet: 0.2626, loss: 7.5283, grad_norm: 325.4433
2024-12-13 00:46:44.047 - mmdet - INFO - Epoch [1][100/1902]   lr: 4.894e-05, eta: 15:30:05, time: 0.766, data time: 0.010, memory: 7812, loss_rpn_cls: 0.6775, loss_rpn_bbox: 0.0411, loss_cls: 0.3581, acc: 85.7240, loss_bbox: 0.0886, loss_id: 4.8584, loss_triplet: 0.2673, loss: 6.2999, grad_norm: 335.8035
2024-12-13 00:47:22.687 - mmdet - INFO - Epoch [1][150/1902]   lr: 7.113e-05, eta: 13:34:42, time: 0.773, data time: 0.010, memory: 7812, loss_rpn_cls: 0.6753, loss_rpn_bbox: 0.0473, loss_cls: 0.2322, acc: 92.8021, loss_bbox: 0.1007, loss_id: 4.5452, loss_triplet: 0.2475, loss: 5.8482, grad_norm: 343.7802
2024-12-13 00:48:02.561 - mmdet - INFO - Epoch [1][200/1902]   lr: 9.332e-05, eta: 12:41:21, time: 0.797, data time: 0.011, memory: 7812, loss_rpn_cls: 0.6710, loss_rpn_bbox: 0.0526, loss_cls: 0.2015, acc: 93.9375, loss_bbox: 0.1150, loss_id: 4.9072, loss_triplet: 0.2587, loss: 6.2060, grad_norm: 339.6503
2024-12-13 00:48:42.949 - mmdet - INFO - Epoch [1][250/1902]   lr: 1.155e-04, eta: 12:10:40, time: 0.808, data time: 0.011, memory: 8098, loss_rpn_cls: 0.6611, loss_rpn_bbox: 0.0456, loss_cls: 0.1695, acc: 94.8437, loss_bbox: 0.1087, loss_id: 5.1751, loss_triplet: 0.2560, loss: 6.4160, grad_norm: 327.5135
2024-12-13 00:49:20.129 - mmdet - INFO - Epoch [1][300/1902]   lr: 1.377e-04, eta: 11:41:53, time: 0.744, data time: 0.010, memory: 8098, loss_rpn_cls: 0.6523, loss_rpn_bbox: 0.0469, loss_cls: 0.1557, acc: 94.9271, loss_bbox: 0.1303, loss_id: 5.1639, loss_triplet: 0.2433, loss: 6.4085, grad_norm: 336.5077
2024-12-13 00:49:59.588 - mmdet - INFO - Epoch [1][350/1902]   lr: 1.599e-04, eta: 11:26:04, time: 0.789, data time: 0.010, memory: 8098, loss_rpn_cls: 0.6433, loss_rpn_bbox: 0.0481, loss_cls: 0.1341, acc: 95.6198, loss_bbox: 0.1390, loss_id: 5.3623, loss_triplet: 0.2673, loss: 6.5940, grad_norm: 286.0207
2024-12-13 00:50:38.976 - mmdet - INFO - Epoch [1][400/1902]   lr: 1.821e-04, eta: 11:13:54, time: 0.788, data time: 0.010, memory: 8098, loss_rpn_cls: 0.6281, loss_rpn_bbox: 0.0451, loss_cls: 0.1178, acc: 95.6875, loss_bbox: 0.1414, loss_id: 6.0964, loss_triplet: 0.2857, loss: 7.3146, grad_norm: 231.9376

```

```

+-----+-----+-----+-----+-----+-----+
| 1 Tesla P100-PCIE... Off | 00000000:3B:00.0 Off | 0 |
| N/A 59C P0 193W / 250W | 12275MiB / 16280MiB | 45% Default |
+-----+-----+-----+-----+-----+-----+

```

```

2024-12-13 09:52:03.924 - mmdet - INFO - Epoch [18][1850/1902]   lr: 1.000e-04, eta: 3:03:20, time: 0.925, data time: 0.010, memory: 8195, loss_rpn_cls: 0.0123, loss_rpn_bbox: 0.0146, loss_cls: 0.0209, acc: 99.2865, loss_bbox: 0.4073, loss_id: 2.7025, loss_triplet: 0.1834, loss: 3.3410, grad_norm: 14.8126
2024-12-13 09:52:50.275 - mmdet - INFO - Epoch [18][1900/1902]   lr: 1.000e-04, eta: 3:02:31, time: 0.927, data time: 0.011, memory: 8195, loss_rpn_cls: 0.0100, loss_rpn_bbox: 0.0103, loss_cls: 0.0214, acc: 99.2708, loss_bbox: 0.3585, loss_id: 2.7827, loss_triplet: 0.1802, loss: 3.3631, grad_norm: 14.9750
2024-12-13 09:52:51.480 - mmdet - INFO - Saving checkpoint at 18 epochs
2024-12-13 09:52:51.927 - mmdet - INFO - start clustering for updating, pseudo labels
bruteForceKnn is deprecated; call bfKnn instead

```

```

+-----+-----+-----+-----+-----+-----+
| 1 Tesla P100-PCIE... Off | 00000000:3B:00.0 Off | 0 |
| N/A 50C P0 34W / 250W | 13811MiB / 16280MiB | 8% Default |
+-----+-----+-----+-----+-----+-----+

```

```

not detected c3s2_119344.jpg 0.0
not detected c3s2_128194.jpg 0.31232038
not detected c3s2_128219.jpg 0.24736506
not detected c3s2_128219.jpg 0.43878743
not detected c5s2_130949.jpg 0.2696605
search ranking:
mAP = 17.22%
top- 1 = 68.79%
top- 5 = 81.04%
top-10 = 84.69%

```

1.5调参

chai2

```

CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3_106
2>&1 | tee /public/home/G19940018/Group/csj/projects/CCGPS-main/logs/prw/train_prw_b3_106_log.txt

```

chai3

```

CUDA_VISIBLE_DEVICES=2 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3_106_30
2>&1 | tee /public/home/G19940018/Group/csj/projects/CCGPS-main/logs/prw/train_prw_b3_106_30_log.txt

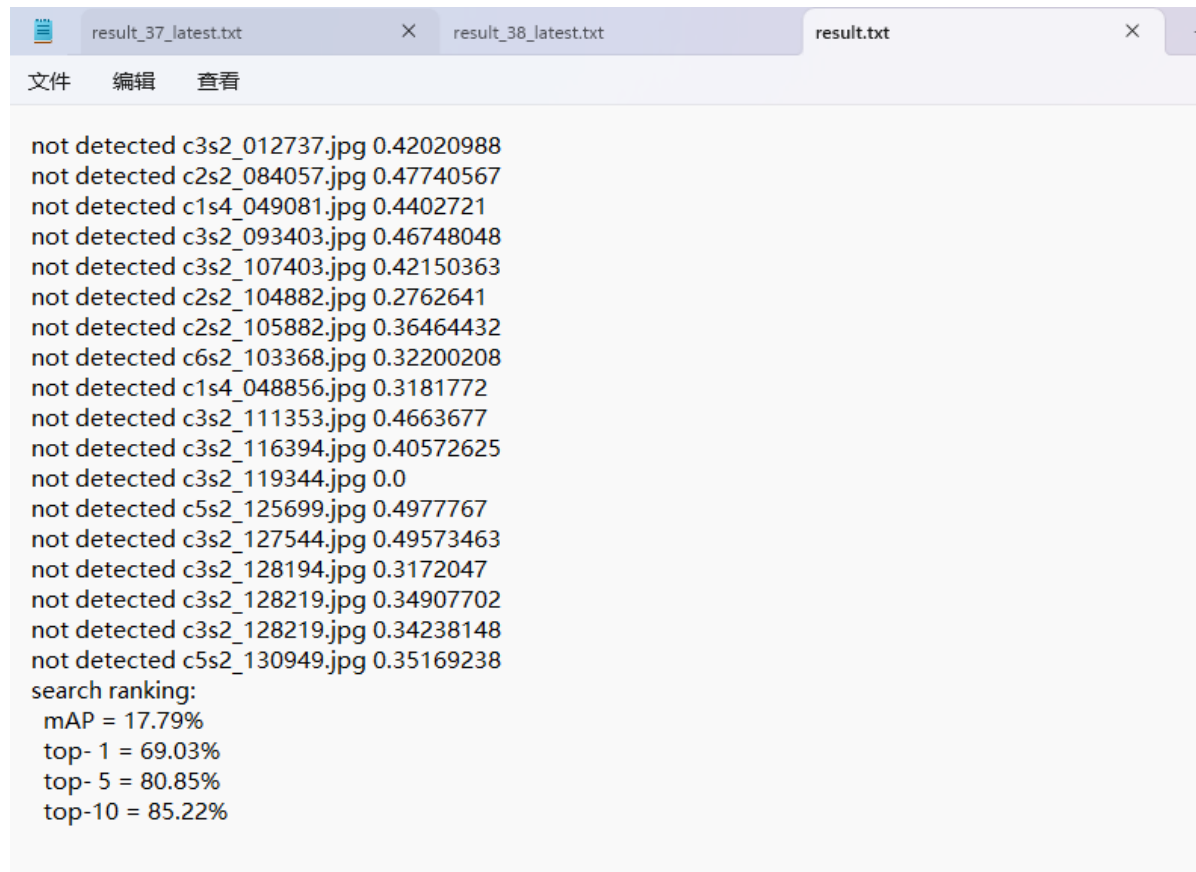
```

chai4

```
CUDA_VISIBLE_DEVICES=3 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3_106_4
2>&1 | tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_b3_106_4_log.txt
```

sysu1,gpu2,s4

```
CUDA_VISIBLE_DEVICES=0 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/prw_b3_106_s4
2>&1 | tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/prw/train_prw_b3_106_s4_log.txt
```

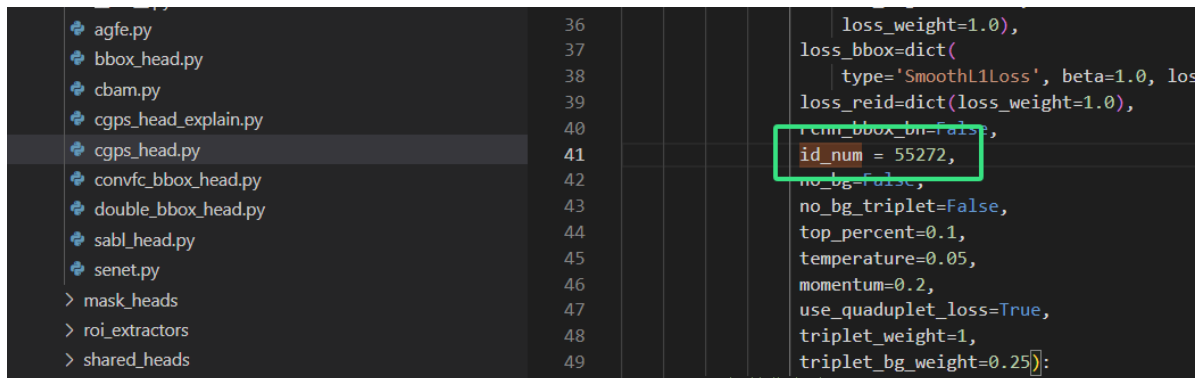


SYSU数据集

sysu1:显存爆炸

workers_per_gpu=4,sampers_per_gpu=4


```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py --
work-dir /public/home/G19940018/Group/csj/projects/CCGPS-main/work_dirs/sysu_b4_1
2>&1 | tee /public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/sysu/train_b4_1_log.txt
```



```
+-----+
| 1 Tesla P100-PCIE... Off | 00000000:3B:00.0 Off |      0 |
| N/A   55C    P0   182W / 250W | 16053MiB / 16280MiB |    76%   Default |
+-----+
```

sysu_b3_1

workers_per_gpu=3,sampers_per_gpu=3

```
+-----+
| 2 Tesla P100-PCIE... Off | 00000000:86:00.0 Off |      0 |
| N/A   52C    P0   188W / 250W | 12797MiB / 16280MiB |    81%   Default |
+-----+
```

```
CUDA_VISIBLE_DEVICES=0 python -u
/public/home/G19940018/Group/csj/projects/CCGPS-main/tools/test_personsearch.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py
/public/home/G19940018/Group/csj/projects/CCGPS-
main/work_dirs/sysu_b3_1/latest.pth --eval bbox >>logs/sysu/result_latest.txt
2>&1
```

```
/public/home/G19940018/anaconda3/envs/csj/lib/python3.7/site-
packages/mmdet/core/utis
```

```
File "../tools/test_personsearch.py", line 20, in <module>
    from mmdet.core import encode_mask_results, tensor2imgs
ImportError: cannot import name 'tensor2imgs' from 'mmdet.core'
(/public/home/G19940018/anaconda3/envs/csj/lib/python3.7/site-
packages/mmdet/core/__init__.py)
```


All detection:
Recall = 92.27%
AP = 86.49%
Labeled only detection:
Recall = 99.35%
Search ranking:
mAP = 80.09%
Top- 1 = 82.03%
Top- 5 = 92.28%
Top-10 = 95.38%

sysu_b3_2

workers_per_gpu=3,sampers_per_gpu=3,

```
CUDA_VISIBLE_DEVICES=1 python -u  
/public/home/G19940018/Group/csj/projects/CCGPS-main/tools/test_personsearch.py  
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py  
/public/home/G19940018/Group/csj/projects/CCGPS-  
main/work_dirs/sysu_b4_2/latest.pth --eval bbox  
>>logs/sysu/result_latest_b4_2.txt 2>&1
```

AP = 80.04%
Labeled only detection:
Recall = 99.40%
Search ranking:
mAP = 79.64%
Top- 1 = 81.76%
Top- 5 = 92.17%
Top-10 = 94.72%

sysu_b3_2

workers_per_gpu=3,sampers_per_gpu=3

```
CUDA_VISIBLE_DEVICES=2 python -u  
/public/home/G19940018/Group/csj/projects/CCGPS-main/tools/test_personsearch.py  
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py  
/public/home/G19940018/Group/csj/projects/CCGPS-  
main/work_dirs/sysu_b3_2/latest.pth --eval bbox >>logs/sysu/result_latest.txt  
2>&1
```

```
AP = 85.51%
Labeled only detection:
Recall = 99.35%
Search ranking:
mAP = 79.79%
Top- 1 = 82.07%
Top- 5 = 92.55%
Top-10 = 95.07%
```

sysu_b3_test

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py --
work-dir /public/home/G19940018/Group/csj/projects/CCGPS-
main/work_dirs/sysu_b3_test 2>&1 | tee
/public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/sysu/train_b3_test_log.txt
```

```
CUDA_VISIBLE_DEVICES=0 python -u
/public/home/G19940018/Group/csj/projects/CCGPS-main/tools/test_personsearch.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py
/public/home/G19940018/Group/csj/projects/CCGPS-
main/work_dirs/sysu_b3_test/latest.pth --eval bbox
>>logs/sysu/result_b3_test_latest.txt 2>&1
```

PRW

```
CUDA_VISIBLE_DEVICES=0 python tools/train.py
/public/home/G19940018/Group/csj/projects/DICL-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/DICL-main/work_dirs/prw 2>&1 | tee
/public/home/G19940018/Group/csj/projects/DICL-
main/logs/prw/train_prw_batch3_log.txt
```

csj2: x+CBAM; x1+CBAM__ out of memory

```
CUDA_VISIBLE_DEVICES=1 python tools/train.py
/public/home/G19940018/Group/csj/projects/CGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CGPS-main/work_dirs/prw_2 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CGPS-
main/logs/prw/train_prw_2_log.txt
```

```
CUDA_VISIBLE_DEVICES=2 python tools/train.py
/public/home/G19940018/Group/csj/projects/CGPS-main/configs/cgps/prw.py --work-
dir /public/home/G19940018/Group/csj/projects/CGPS-main/work_dirs/prw_3 2>&1 |
tee /public/home/G19940018/Group/csj/projects/CGPS-
main/logs/prw/train_prw_3_log.txt
```

```

result [2].txt      result_latest.txt
文件  编辑  查看
loading annotations into memory...
Done (t=0.16s)
creating index...
index created!
loading annotations into memory...
Done (t=0.18s)
creating index...
index created!
/public/home/G19940018/Group/csj/projects/CGPS-
main/mmdet/core/post_processing/bbox_nms.py:131:
overload of nonzero is deprecated:
    nonzero()
Consider using one of the following signatures instead:
    nonzero(*, bool as_tuple) (Triggered internally at
bld/pytorch_1607370144807/work/torch/csrc/utils/pyt
labels = valid_mask.nonzero()[:, 1]
All detection:
Recall = 92.08%
AP = 86.19%
Labeled only detection:
Recall = 99.34%
Search ranking:
mAP = 80.43%
Top- 1 = 82.17%
Top- 5 = 93.14%
Top-10 = 95.17%
```

1	Tesla P100-PCIE...	Off	00000000:3B:00.0	Off	0
N/A	58C	P0	50W / 250W	15823MiB / 16280MiB	100% Default

Fan	Temp	Perf	Pwr:Usage/Cap	Memory-Usage	GPU-Util	Compute M.
0	Tesla P100-PCIE...	Off	00000000:18:00.0 Off	0		
N/A	28C	P0	25W / 250W	0MiB / 16280MiB	0%	Default
1	Tesla P100-PCIE...	Off	00000000:3B:00.0 Off	0		
N/A	59C	P0	172W / 250W	15569MiB / 16280MiB	100%	Default
2	Tesla P100-PCIE...	Off	00000000:86:00.0 Off	0		
N/A	29C	P0	26W / 250W	0MiB / 16280MiB	0%	Default

Thu Dec 12 23:33:08 2024

NVIDIA-SMI 410.48				Driver Version: 410.48		
GPU	Name	Persistence-M	Bus-Id	Disp.A	Volatile Uncorr. ECC	
Fan	Temp	Perf	Pwr:Usage/Cap	Memory-Usage	GPU-Util	Compute M.
0	Tesla P100-PCIE...	Off	00000000:18:00.0 Off	0		
N/A	55C	P0	49W / 250W	15827MiB / 16280MiB	81%	Default
1	Tesla P100-PCIE...	Off	00000000:3B:00.0 Off	0		
N/A	33C	P0	26W / 250W	0MiB / 16280MiB	0%	Default
2	Tesla P100-PCIE...	Off	00000000:86:00.0 Off	0		
N/A	55C	P0	163W / 250W	12903MiB / 16280MiB	100%	Default
3	Tesla P100-PCIE...	Off	00000000:AF:00.0 Off	0		
N/A	29C	P0	26W / 250W	0MiB / 16280MiB	0%	Default

Processes:					GPU Memory Usage
GPU	PID	Type	Process name		
0	205943	C	python		15817MiB
2	255119	C	python		12893MiB

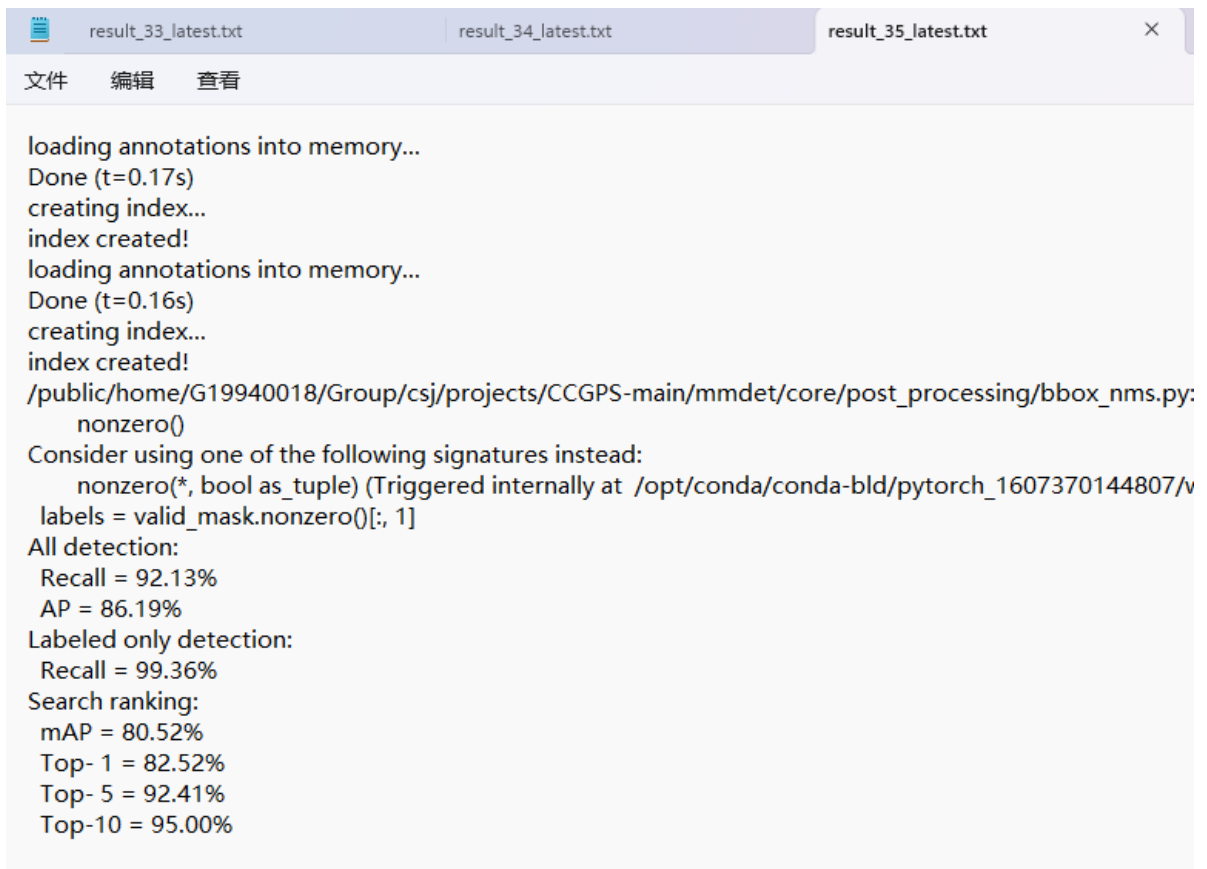
Thu Dec 12 23:33:09 2024

NVIDIA-SMI 410.48				Driver Version: 410.48		
GPU	Name	Persistence-M	Bus-Id	Disp.A	Volatile Uncorr. ECC	
Fan	Temp	Perf	Pwr:Usage/Cap	Memory-Usage	GPU-Util	Compute M.
0	Tesla P100-PCIE...	Off	00000000:18:00.0 Off	0		
N/A	55C	P0	170W / 250W	15827MiB / 16280MiB	82%	Default
1	Tesla P100-PCIE...	Off	00000000:3B:00.0 Off	0		
N/A	33C	P0	26W / 250W	0MiB / 16280MiB	0%	Default
2	Tesla P100-PCIE...	Off	00000000:86:00.0 Off	0		
N/A	55C	P0	159W / 250W	15829MiB / 16280MiB	100%	Default
3	Tesla P100-PCIE...	Off	00000000:AF:00.0 Off	0		
N/A	29C	P0	26W / 250W	0MiB / 16280MiB	0%	Default

1.5调参

```
CUDA_VISIBLE_DEVICES=0 python tools/train.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py --
work-dir /public/home/G19940018/Group/csj/projects/CCGPS-
main/work_dirs/sysu_b3_all_60 2>&1 | tee
/public/home/G19940018/Group/csj/projects/CCGPS-
main/logs/sysu/train_b3_all60.txt
```

```
CUDA_VISIBLE_DEVICES=1 python -u
/public/home/G19940018/Group/csj/projects/CCGPS-main/tools/test_personsearch.py
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/cuhk.py
/public/home/G19940018/Group/csj/projects/CCGPS-
main/work_dirs/sysu_b3_all_48/epoch_45.pth --eval bbox
>>logs/sysu/result_45_latest.txt 2>&1
```



```
result_33_latest.txt  result_34_latest.txt  result_35_latest.txt
文件  编辑  查看

loading annotations into memory...
Done (t=0.17s)
creating index...
index created!
loading annotations into memory...
Done (t=0.16s)
creating index...
index created!
/public/home/G19940018/Group/csj/projects/CCGPS-main/mmdet/core/post_processing/bbox_nms.py:
    nonzero()
Consider using one of the following signatures instead:
    nonzero(*, bool as_tuple) (Triggered internally at /opt/conda/conda-bld/pytorch_1607370144807/v
    labels = valid_mask.nonzero()[:, 1]
All detection:
    Recall = 92.13%
    AP = 86.19%
Labeled only detection:
    Recall = 99.36%
Search ranking:
    mAP = 80.52%
    Top- 1 = 82.52%
    Top- 5 = 92.41%
    Top-10 = 95.00%
```

12.16改代码-XXX2.py

```
/public/home/G19940018/Group/csj/projects/CCGPS-
main/mmdet/models/roi_heads/bbox_heads/cgps_head
```

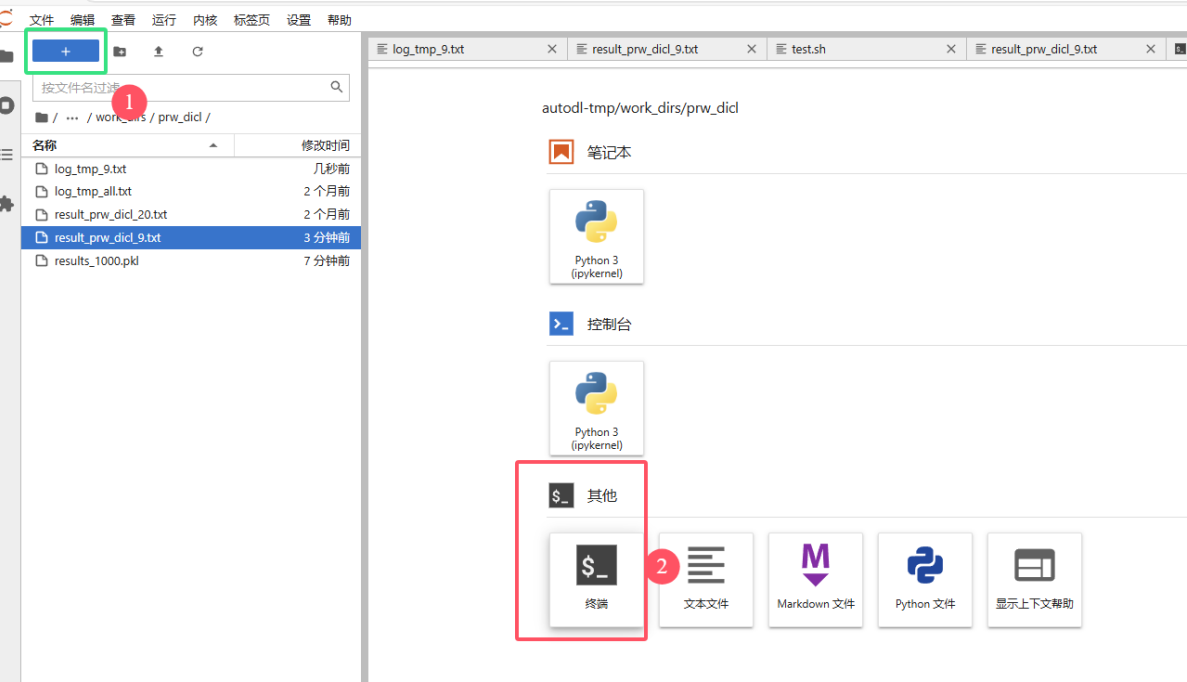
```
/public/home/G19940018/Group/csj/projects/CCGPS-main/configs/cgps/prw.py
```

```
/public/home/G19940018/Group/csj/projects/CCGPS-
main/mmdet/models/roi_heads/reid_roi_head.py
```

```
E:\person_search\DICL-main\mmdet\models\detectors\two_stage.py
```

```
E:\person_search\DICL-main\mmdet\core\label_generators\finch.py
```

云服务器



cd ~da



```
test.sh × result_cuhk_dicl_last.txt × test.sh × re
1 /root/DICL/mmdet/core/label_generators/finch.py:16: UserWarning: pynndescent not installed
2 warnings.warn('pynndescent not installed: {}'.format(e))
3 loading annotations into memory...
4 Done (t=0.25s)
5 creating index...
6 index created!
7 loading annotations into memory...
8 Done (t=0.18s)
9 creating index...
10 index created!
11 All detection:
12     Recall = 89.26%
13     AP = 83.77%
14 Labeled only detection:
15     Recall = 99.23%
16 Search ranking:
17     mAP = 81.86%
18     Top- 1 = 83.93%
19     Top- 5 = 92.97%
20     Top-10 = 95.10%
21
```