

实验过程记录

1、登陆AutoDL

<https://www.autodl.com/console/instance/list>平台，购买容器实例



2、SSH远程登录

- 1 `ssh -p 52589 root@connect.westb.seetacloud.com`
- 2 密码: Fx5bVv6ONaKk

```
Windows PowerShell
Last login: Sat May 18 18:16:11 2024 from 127.0.0.1
+-----AutoDL-----+
目录说明:
+-----+
| 目录 | 名称 | 速度 | 说明 |
+-----+
| / | 系统盘 | 快 | 实例关机数据不会丢失，可存放代码等。会随保存镜像一起保存。 |
| /root/autodl-tmp | 数据盘 | 快 | 实例关机数据不会丢失，可存放读写IO要求高的数据。但不会随保存镜像一起保存 |
| /root/autodl-nas | 网盘 | 慢 | 可以实现多实例间的文件同步共享，不受实例开关机和保存镜像的影响。 |
+-----+

cat: /sys/fs/cgroup/cpu/cpu.cfs_quota_us: No such file or directory
cat: /sys/fs/cgroup/cpu/cpu.cfs_period_us: No such file or directory
-bash: cfs_quota_us / cfs_period_us: division by 0 (error token is "cfs_period_us")
CPU : 核心
cat: /sys/fs/cgroup/memory/memory.limit_in_bytes: No such file or directory
内存: 0 GB
GPU : NVIDIA GeForce RTX 3080, 1
存储:
  系统盘 / : 83% 25G/30G
  数据盘 /root/autodl-tmp: 3% 1.2G/50G
  网盘 /root/autodl-nas:
+-----+

*注意:
1.系统盘较小请将大的数据存放于数据盘或网盘中，重置系统时数据盘和网盘中的数据不受影响
2.清理系统盘请参考: https://www.autodl.com/docs/qa/
(base) root@autodl-container-049a448514-abaf6b8d:~#
(base) root@autodl-container-049a448514-abaf6b8d:~#
(base) root@autodl-container-049a448514-abaf6b8d:~# ls
autodl-nas  autodl-pub  autodl-tmp  miniconda3  mmocr  mmocr.bk  tf-logs
(base) root@autodl-container-049a448514-abaf6b8d:~# |
```

3、环境首次准备（若已配置好，则跳过）

```
1 conda create --name openmmlab python=3.8 -y
2 conda activate openmmlab
3
4 conda install pytorch torchvision -c pytorch
5 pip install -U openmim
6 mim install mmengine
7 mim install mmcv
8 mim install mmdet
9
10 # 源码编译
11 git clone https://github.com/open-
   mmlab/mmcocr.git cd mmcocr pip install -v -e .
12
13 # 设置清华镜像源
14 pip config set global.index-url
   https://pypi.tuna.tsinghua.edu.cn/simple
```

4、vscode配置远程开发

- 安装插件Remote - SSH
- 添加配置

```
1 Host AutoDL
2   HostName connect.westb.seetacloud.com
3   User root
4   IdentityFile C:\Users\LtCc\.ssh\id_rsa
```

- 设置免密登陆

```
1 # 生成公钥
2 ssh-keygen -t rsa -b 4096
3 # 复制到远程服务器上
4 cd .ssh/
5 vim authorized_keys
```

5、训练模型1 (以ICDAR 2015为例)

5.1、ICDAR 2015 数据集

```
1 conda info --envs
2 conda activate openmmlab
3
4
5 python
  tools/dataset_converters/prepare_dataset.py
  icdar2015 --task textdet
6
7
8 ll data/icdar2015/
```

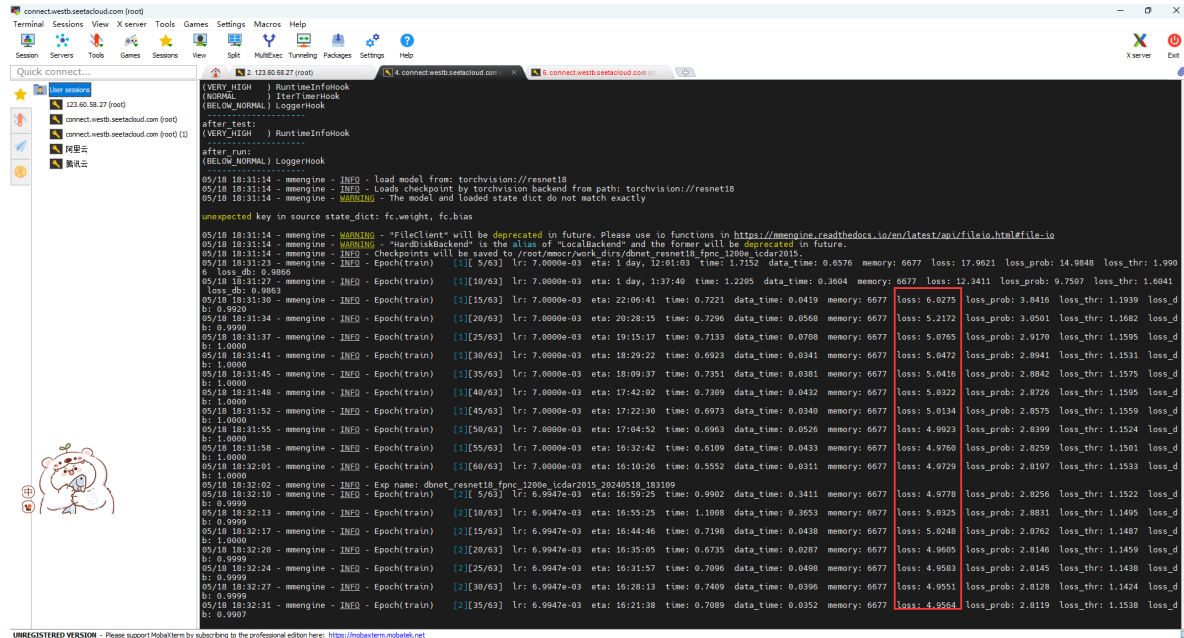
```
(base) root@autodl-container-049a448514-abaf6b8d:~# cd mmocr
(base) root@autodl-container-049a448514-abaf6b8d:~/mmocr# ll data/icdar2015/
total 2512
drwxr-xr-x 3 root root    93 May 18 18:30 ./
drwxr-xr-x 7 root root   111 May 18 18:30 ../
drwxr-xr-x 4 root root    43 May 18 18:30 textdet_imgs/
-rw-r--r-- 1 root root 789801 May 18 18:30 textdet_test.json
-rw-r--r-- 1 root root 1781545 May 18 18:30 textdet_train.json
(base) root@autodl-container-049a448514-abaf6b8d:~/mmocr# |
```

- 可视化数据集的标签是否被正确生成

```
1 python tools/visualizations/browse_dataset.py
  configs/textdet/_base_/datasets/icdar2015.py
```

5.2、ICDAR 2015 训练

```
1 python tools/train.py
  configs/textdet/dbnet/dbnet_resnet18_fpnrc_1200e
    _icdar2015.py
```



```
connectwest@seetcloud.com (root)
Terminal Sessions View X server Tools Games Settings Macros Help
Season Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...
* User sessions
  122.60.18.27 (root)
  connect.westb.seetcloud.com (root)
  connect.westb.seetcloud.com (root) (1)
  阿里云
  腾讯云

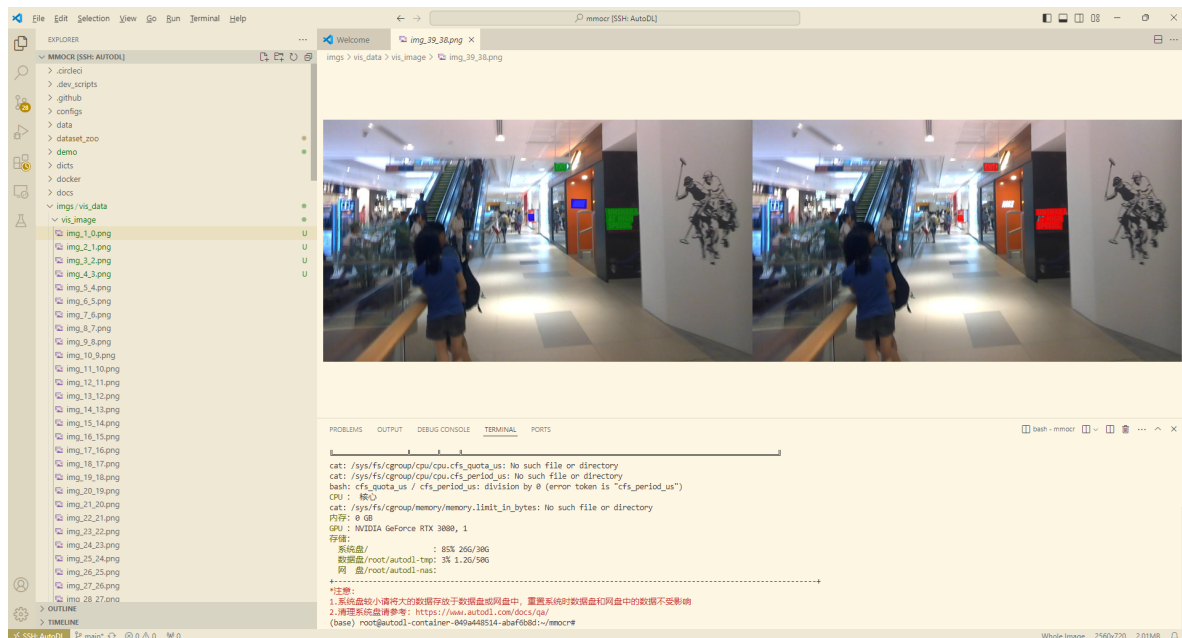
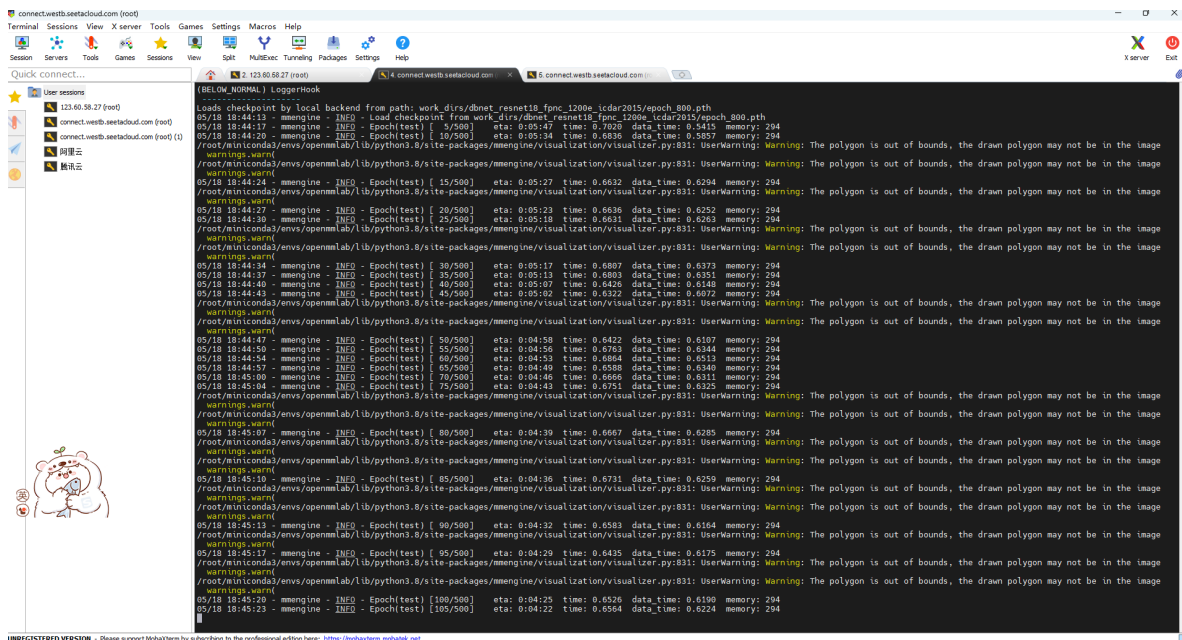
(VERY_HIGH) RuntimeInfoHook
(NORMAL) IterLoggerHook
(BELOW_NORMAL) LoggerHook
-----
after test:
(VERY_HIGH) RuntimeInfoHook
(NORMAL) IterLoggerHook
(BELOW_NORMAL) LoggerHook
-----
after run:
(BELOW_NORMAL) LoggerHook

05/18 18:31:14 - mmengine - INFO - Load model from: torchvision://resnet18
05/18 18:31:14 - mmengine - INFO - Loads checkpoint by torchvision backend from path: torchvision://resnet18
05/18 18:31:14 - mmengine - WARNING - The model and loaded state dict do not match exactly
unexpected key in source state_dict: fc.weight, fc.bias
05/18 18:31:14 - mmengine - WARNING - "FileClient" will be deprecated in future. Please use io functions in https://mengine.readthedocs.io/en/latest/api/fileio.html#file-io
05/18 18:31:14 - mmengine - WARNING - "HardDiskBackend" is the alias of "LocalBackend" and the former will be deprecated in future.
05/18 18:31:23 - mmengine - INFO - Checkpoints will be saved to: /root/.mace/work_dirs/dbnet_resnet18_fpnrc_1200e_icdar2015.
0 loss: 0.9065
05/18 18:31:27 - mmengine - INFO - Epoch(train) [1][10/63] lr: 7.0000e-03 eta: 1 day, 1:37:40 time: 1.2205 data_time: 0.3604 memory: 6677 loss: 17.9621 loss_prob: 14.9848 loss_thr: 1.6041
loss: 0.9068
05/18 18:31:30 - mmengine - INFO - Epoch(train) [1][15/63] lr: 7.0000e-03 eta: 22:06:41 time: 0.7221 data_time: 0.0419 memory: 6677 loss: 6.0275 loss_prob: 3.8416 loss_thr: 1.1939 loss_d
b: 0.9020
05/18 18:31:34 - mmengine - INFO - Epoch(train) [1][20/63] lr: 7.0000e-03 eta: 20:28:15 time: 0.7296 data_time: 0.0568 memory: 6677 loss: 5.2172 loss_prob: 3.0501 loss_thr: 1.1682 loss_d
b: 0.9999
05/18 18:31:37 - mmengine - INFO - Epoch(train) [1][25/63] lr: 7.0000e-03 eta: 19:15:17 time: 0.7133 data_time: 0.0708 memory: 6677 loss: 5.0765 loss_prob: 2.9170 loss_thr: 1.1595 loss_d
b: 1.0000
05/18 18:31:41 - mmengine - INFO - Epoch(train) [1][30/63] lr: 7.0000e-03 eta: 18:29:22 time: 0.6923 data_time: 0.0341 memory: 6677 loss: 5.0472 loss_prob: 2.8941 loss_thr: 1.1531 loss_d
b: 1.0000
05/18 18:31:45 - mmengine - INFO - Epoch(train) [1][35/63] lr: 7.0000e-03 eta: 18:09:37 time: 0.7351 data_time: 0.0381 memory: 6677 loss: 5.0416 loss_prob: 2.8842 loss_thr: 1.1575 loss_d
b: 1.0000
05/18 18:31:48 - mmengine - INFO - Epoch(train) [1][40/63] lr: 7.0000e-03 eta: 17:42:02 time: 0.7309 data_time: 0.0432 memory: 6677 loss: 5.0322 loss_prob: 2.8726 loss_thr: 1.1595 loss_d
b: 1.0000
05/18 18:31:52 - mmengine - INFO - Epoch(train) [1][45/63] lr: 7.0000e-03 eta: 17:22:30 time: 0.6973 data_time: 0.0340 memory: 6677 loss: 5.0134 loss_prob: 2.8575 loss_thr: 1.1559 loss_d
b: 1.0000
05/18 18:31:55 - mmengine - INFO - Epoch(train) [1][50/63] lr: 7.0000e-03 eta: 17:04:52 time: 0.6963 data_time: 0.0526 memory: 6677 loss: 4.9923 loss_prob: 2.8399 loss_thr: 1.1524 loss_d
b: 1.0000
05/18 18:31:58 - mmengine - INFO - Epoch(train) [1][55/63] lr: 7.0000e-03 eta: 16:32:42 time: 0.6109 data_time: 0.0433 memory: 6677 loss: 4.9760 loss_prob: 2.8259 loss_thr: 1.1501 loss_d
b: 1.0000
05/18 18:32:01 - mmengine - INFO - Epoch(train) [1][60/63] lr: 7.0000e-03 eta: 16:10:26 time: 0.5552 data_time: 0.0311 memory: 6677 loss: 4.9739 loss_prob: 2.8107 loss_thr: 1.1533 loss_d
b: 1.0000
05/18 18:32:02 - mmengine - INFO - Exp name: dbnet_resnet18_fpnrc_1200e_icdar2015_20240518_183109
05/18 18:32:10 - mmengine - INFO - Epoch(train) [2][0/63] lr: 6.9947e-03 eta: 16:59:25 time: 0.9902 data_time: 0.3411 memory: 6677 loss: 4.9778 loss_prob: 2.8256 loss_thr: 1.1522 loss_d
b: 0.9999
05/18 18:32:13 - mmengine - INFO - Epoch(train) [2][10/63] lr: 6.9947e-03 eta: 16:55:25 time: 1.1008 data_time: 0.3653 memory: 6677 loss: 5.0325 loss_prob: 2.8831 loss_thr: 1.1495 loss_d
b: 0.9999
05/18 18:32:17 - mmengine - INFO - Epoch(train) [2][15/63] lr: 6.9947e-03 eta: 16:44:46 time: 0.7198 data_time: 0.0438 memory: 6677 loss: 5.0248 loss_prob: 2.8702 loss_thr: 1.1487 loss_d
b: 1.0000
05/18 18:32:20 - mmengine - INFO - Epoch(train) [2][20/63] lr: 6.9947e-03 eta: 16:35:05 time: 0.6735 data_time: 0.0287 memory: 6677 loss: 4.9605 loss_prob: 2.8146 loss_thr: 1.1459 loss_d
b: 0.9999
05/18 18:32:24 - mmengine - INFO - Epoch(train) [2][25/63] lr: 6.9947e-03 eta: 16:31:57 time: 0.7096 data_time: 0.0498 memory: 6677 loss: 4.9583 loss_prob: 2.8145 loss_thr: 1.1438 loss_d
b: 0.9999
05/18 18:32:27 - mmengine - INFO - Epoch(train) [2][30/63] lr: 6.9947e-03 eta: 16:28:13 time: 0.7409 data_time: 0.0396 memory: 6677 loss: 4.9551 loss_prob: 2.8128 loss_thr: 1.1424 loss_d
b: 0.9997
05/18 18:32:31 - mmengine - INFO - Epoch(train) [2][35/63] lr: 6.9947e-03 eta: 16:21:38 time: 0.7089 data_time: 0.0352 memory: 6677 loss: 4.9584 loss_prob: 2.8119 loss_thr: 1.1538 loss_d
b: 0.9907

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```

5.3、预测测试集

```
1 python tools/test.py
  configs/textdet/dbnet/dbnet_resnet18_fpnrc_1200e
    _icdar2015.py
  work_dirs/dbnet_resnet18_fpnrc_1200e_icdar2015/e
    poch_800.pth --show-dir imgs/
```



6、训练模型2（以cute80数据集为例）

6.1、数据集准备(若数据集已下载，则跳过此步骤)

```
1 python
tools/dataset_converters/prepare_dataset.py
cute80 --task textrecog
```

6.2、训练

```
1 python tools/train.py  
  configs/textrecog/abinet/abinet_20e_st-an_mj.py
```

6.3、测试

```
1 python tools/infer.py  
  data/cute80/textrecog_imgs/test/023.jpg --rec  
  ABINet --print-result --save_pred --save_vis  
2  
3 python tools/infer.py  
  data/cute80/textrecog_imgs/test/024.jpg --rec  
  ABINet --print-result --save_pred --save_vis  
4  
5 python tools/infer.py  
  data/cute80/textrecog_imgs/test/042.jpg --rec  
  ABINet --print-result --save_pred --save_vis
```

X、常见问题记录

1、处理磁盘空间不足的问题

```
1 mv /root/mmocr/icdar2015/ /root/autodl-tmp/  
2 mv /root/mmocr/imgs/vis_data/ /root/autodl-  
  tmp/  
3  
4
```

2、Python代码报错

```
1 Obtaining train Dataset...
```

```

2   ctw1500_train_images has been extracted. Skip
3   ctw1500_train_labels has been extracted. Skip
4   Gathering train Dataset...
5   Parsing train Images and Annotations...
6
7   [>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
>>>>>]
8   1000/1000, 4354.0 task/s, elapsed: 0s, ETA:
9
10  Packing train Annotations...
11
12  [>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
>>>>>]
13  1000/1000, 68.4 task/s, elapsed: 15s, ETA:
14  Dumping train Annotations...
15  Obtaining test Dataset...
16  ctw1500_test_images has been extracted. Skip
17  Gathering test Dataset...
18  Parsing test Images and Annotations...
19  [
20
21  0s
22  0s
23  ]
24  0/500, elapsed: 0s,
25  ETA:multiprocessing.pool.RemoteTraceback:
26  """
27  Traceback (most recent call last):
28  File
29  "/root/miniconda3/envs/openmmlab/lib/python3.8
/multipro
cessing/pool.py", line 125, in worker
result = (True, func(*args, **kwargs))
File
```

```

29  "/root/miniconda3/envs/openmmlab/lib/python3.8
    /multipro
30  cessing/pool.py", line 51, in starmapstar
31  return list(itertools.starmap(args[0],
    args[1]))
32  File
33  "/root/mmdet/mmdet/datasets/preparers/parsers/
    ctw1500_p
34  arser.py", line 57, in parse_file
35  instances = self.load_txt_info(ann_path)
36  File
37  "/root/mmdet/mmdet/datasets/preparers/parsers/
    ctw1500_p
38  arser.py", line 69, in load_txt_info
39  for line in list_from_file(anno_dir):
40

```

解决方法:

```

1  import os
2  def add_prefix(directory, prefix):
3  for filename in os.listdir(directory):
4  if not os.path.isfile(os.path.join(directory,
5  filename)):
6  continue
7  new_filename = f"{prefix}{filename}"
8  old_path = os.path.join(directory, filename)
9  new_path = os.path.join(directory,
10 new_filename)
11  try:
12  os.rename(old_path, new_path)
13  print(f"已为 {new_filename} 添加了前缀")
14  except FileExistsError:
15  print(f"无法重命名 {filename}: 文件已存在")
16  # 调用函数并传入要处理的目录路径和前缀字符串

```



```
17 | add_prefix("./", "000")
```