1．设置环境

进入到项目所在目录

conda create -n sfm python==3.7.6

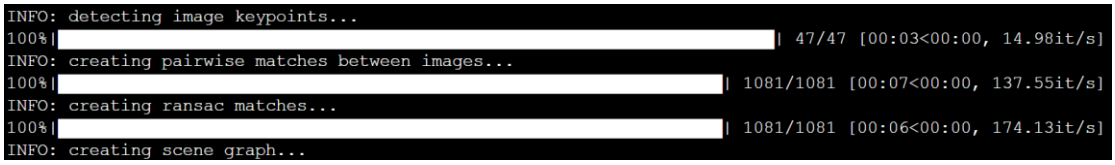
conda activate sfm

pip install -r requirements.txt

2．运行脚本

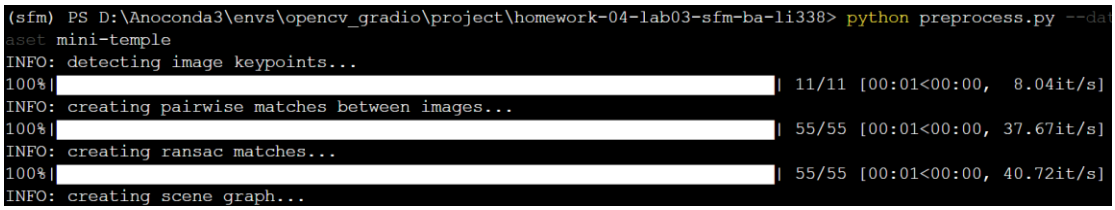
2.1 对 temple 数据集进行预处理

python preprocess.py --dataset temple



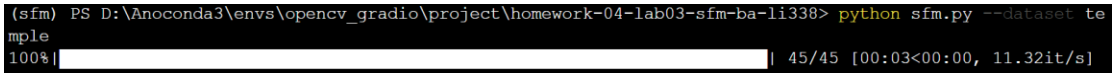
2.2 对 mini-temple 数据集进行预处理

python preprocess.py --dataset mini-temple



2.3 执行不包含捆绑调整的结构从运动中恢复

python sfm.py --dataset temple



2.4 在 mini-temple 数据集上执行包含捆绑调整的结构从运动中恢复

python sfm.py --dataset mini-temple –ba

```
100%|                                                                                | 9/9 [00:00<00:00, 14.97it/s]
   Iteration     Total nfev        Cost      Cost reduction    Step norm     Optimality
       0              1         6.0598e+02                                    1.32e+05
       1             12         5.3862e+02      6.74e+01       5.44e-04       2.14e+04
       2             14         5.3358e+02      5.04e+00       2.72e-04       1.97e+04
       3             15         5.3346e+02      1.20e-01       2.72e-04       4.66e+04
       4             16         5.3033e+02      3.13e+00       6.80e-05       1.45e+04
       5             17         5.2904e+02      1.29e+00       1.36e-04       1.57e+04
       6             18         5.2856e+02      4.80e-01       1.36e-04       2.25e+04
       7             19         5.2765e+02      9.07e-01       3.40e-05       1.08e+04
       8             20         5.2694e+02      7.14e-01       6.80e-05       7.09e+03
       9             21         5.2645e+02      4.88e-01       6.80e-05       1.73e+04
      10             22         5.2604e+02      4.08e-01       6.80e-05       2.82e+04
      11             23         5.2556e+02      4.78e-01       6.80e-05       2.94e+04
      12             24         5.2504e+02      5.26e-01       6.80e-05       2.95e+04
      13             25         5.2456e+02      4.82e-01       6.80e-05       3.02e+04
      14             26         5.2403e+02      5.26e-01       6.80e-05       2.99e+04
      15             27         5.2355e+02      4.76e-01       6.80e-05       3.04e+04
      16             28         5.2304e+02      5.18e-01       6.80e-05       3.00e+04
      17             29         5.2257e+02      4.68e-01       6.80e-05       3.05e+04
      18             30         5.2206e+02      5.10e-01       6.80e-05       3.01e+04
The maximum number of function evaluations is exceeded.
Function evaluations 30, initial cost 6.0598e+02, final cost 5.2206e+02, first-order optimality 3.01e+04.
```

2.5 在 mini-temple 数据集上执行不包含捆绑调整的结构从运动中恢复

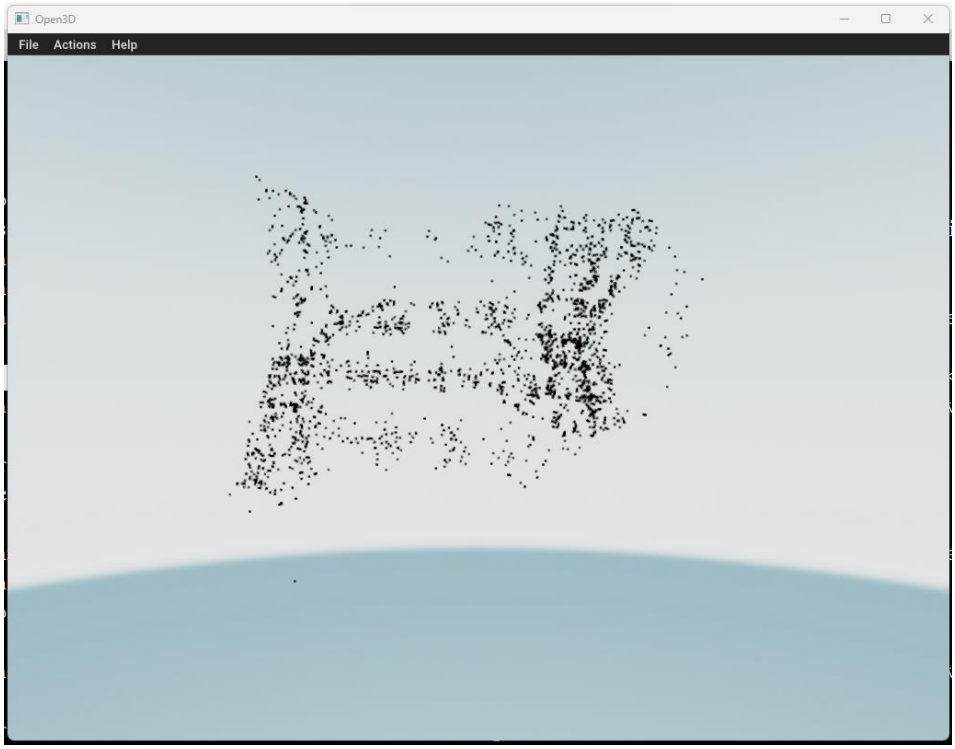
python sfm.py --dataset mini-temple

```
(sfm) PS D:\Anoconda3\envs\opencv_gradio\project\homework-04-lab03-sfm-ba-li338> python sfm.py --dataset mi
ni-temple
100%|                                                                                | 9/9 [00:00<00:00,  9.46it/s]
```

3．可视化

3.1 从重建中可视化 3D 点云

python visualize.py --dataset mini-temple



3.2 temple 数据集上的重建 3D 点云

python visualize.py --dataset temple