基于图像的三维重建 - 作业 1

peng00bo00

January 23, 2021

1. 在终端运行程序结果如 Fig.1所示。

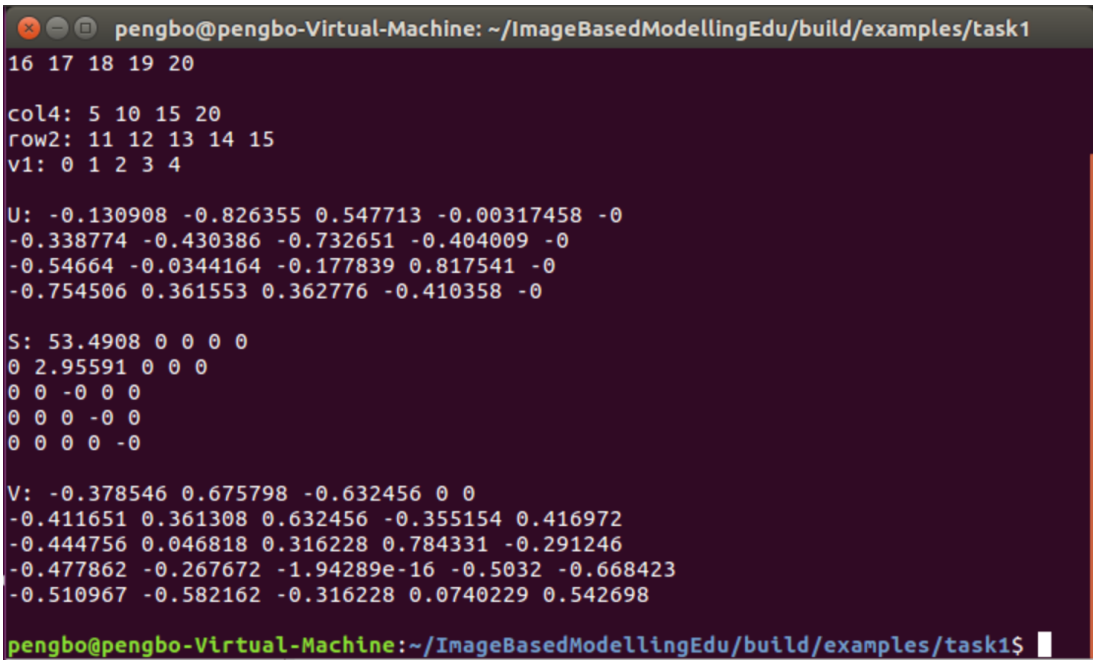

Figure 1: Task 1-1

2. 补充针孔相机成像代码后得到程序运行结果如 Fig.2。

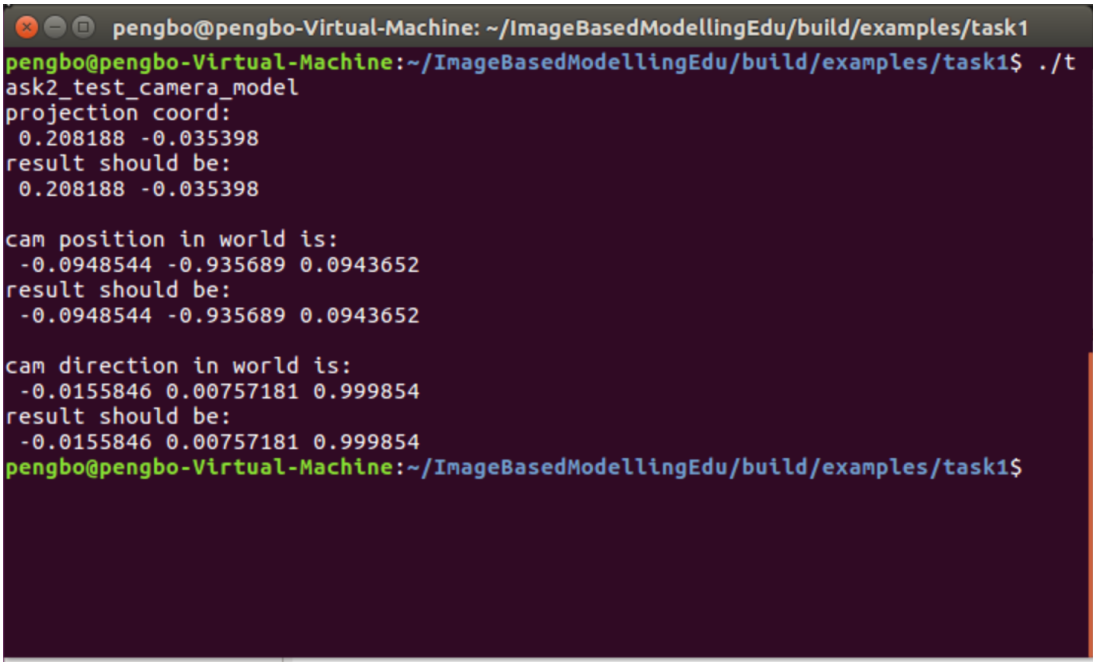

Figure 2: Task 1-2

3. 筛选前和筛选后进行特征匹配的结果如 Fig.3-Fig.4所示，可以发现使用 lowe-ratio 进行筛选可以抑制大量的不稳定匹配，提高匹配效果。

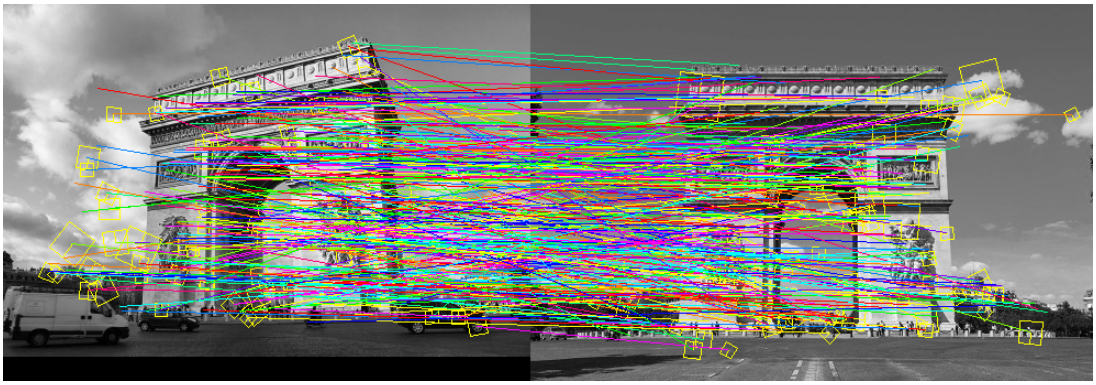

Figure 3: Task 1-3（筛选前）

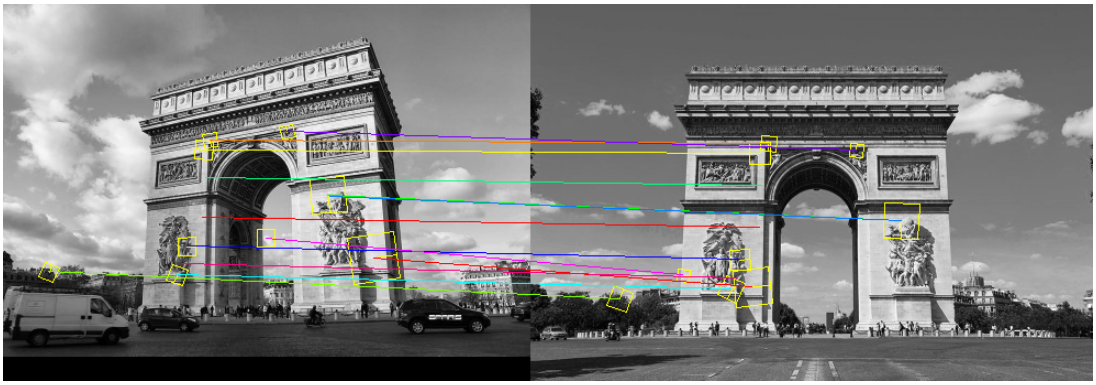

Figure 4: Task 1-3（筛选后）

4. 补充 8 点法计算基本矩阵代码后得到程序运行结果如 Fig.5。

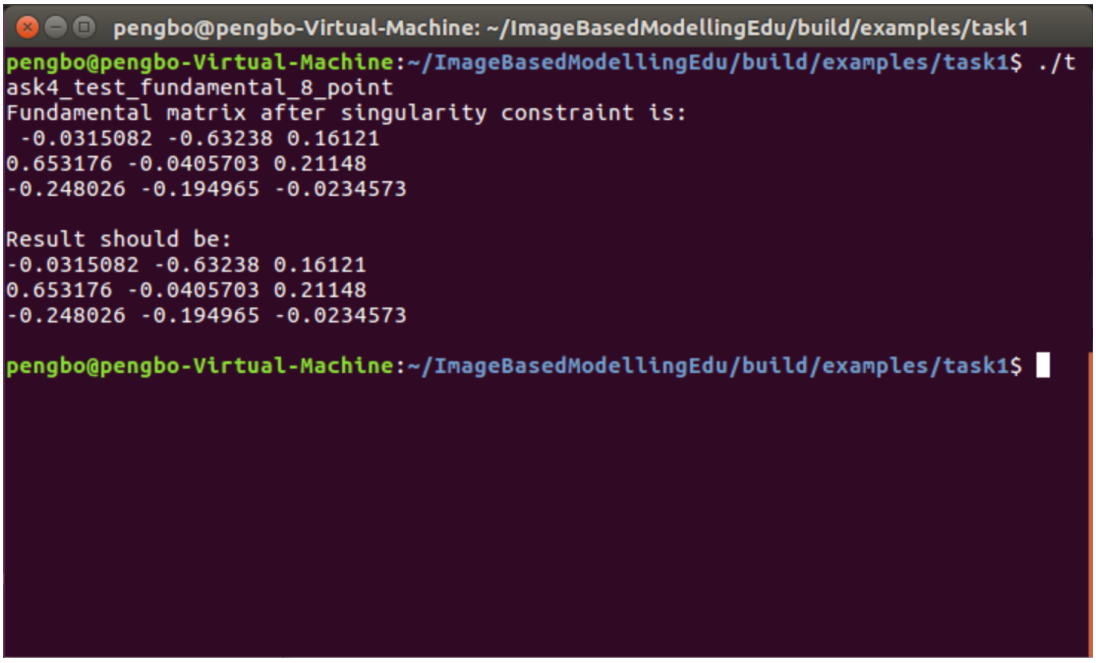

Figure 5: Task 1-4

5. 补充 RANSAC 求解基本矩阵代码后得到程序运行结果如 Fig.6。

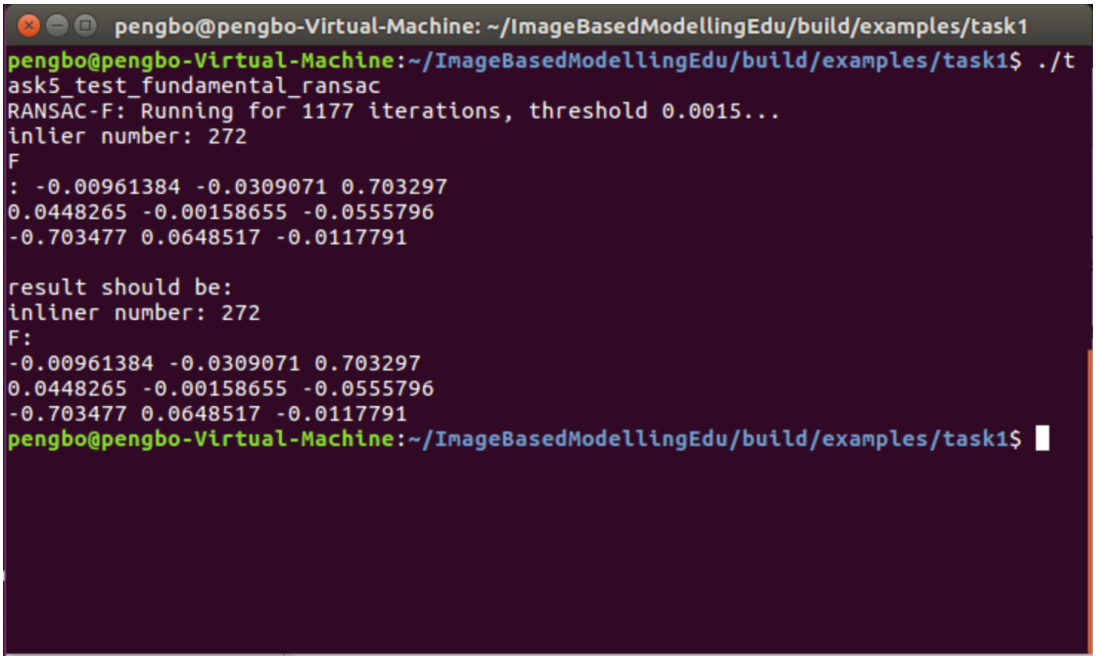

Figure 6: Task 1-5

6. 补充本质矩阵分解得到相机位姿代码后得到程序运行结果如 Fig.7。

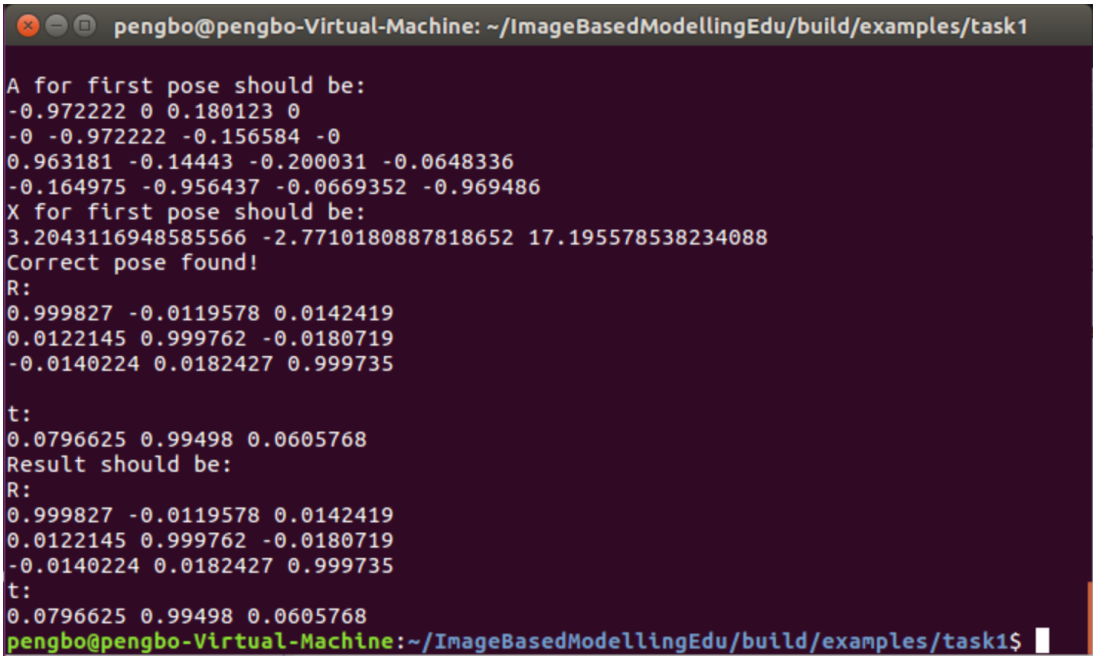

Figure 7: Task 1-6