Lab-07 Report

st122246

July 22, 2022

1 PySLAM on Video Datatset

2 PySLAM on TUM Dataset

```
1 //config.ini
2 [DATASET]
3 ; select your dataset (decomment only one of the
    following lines!)
4 ;type=KITTI_DATASET
5 type=TUM_DATASET
6 ;type=VIDEO_DATASET
7 ;type=FOLDER_DATASET
8 ;type=LIVE_DATASET
9 ;type=RC_DATASET
10
```

3 PySLAM on Own Video

```
1 //config.ini
2 [DATASET]
3 ; select your dataset (decomment only one of the
    following lines!)
4 ;type=KITTI_DATASET
5 ;type=TUM_DATASET
6 ;type=VIDEO_DATASET
7 ;type=FOLDER_DATASET
8 ;type=LIVE_DATASET
```

Figure 1: Video Dataset

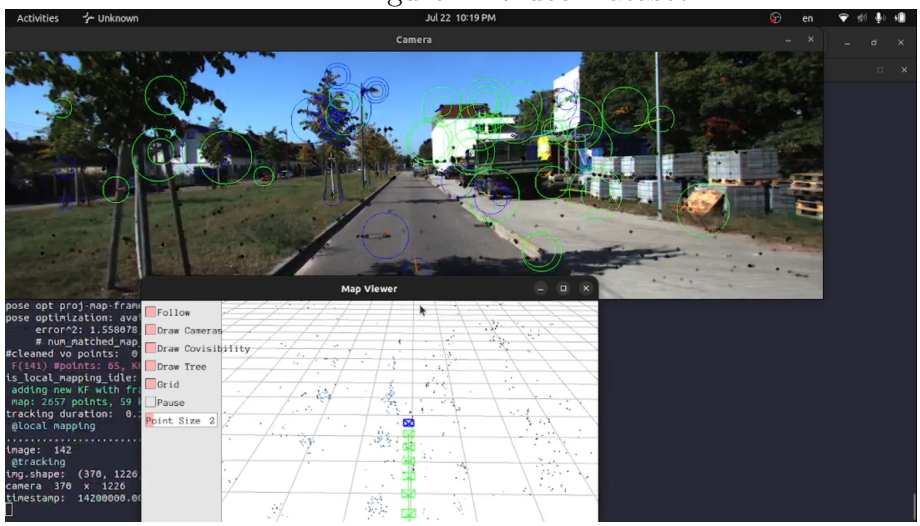
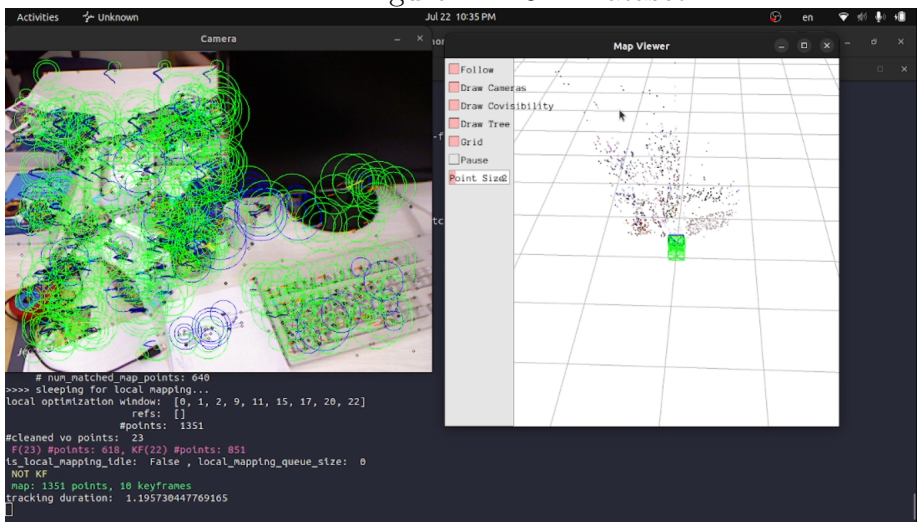


Figure 2: TUM Dataset

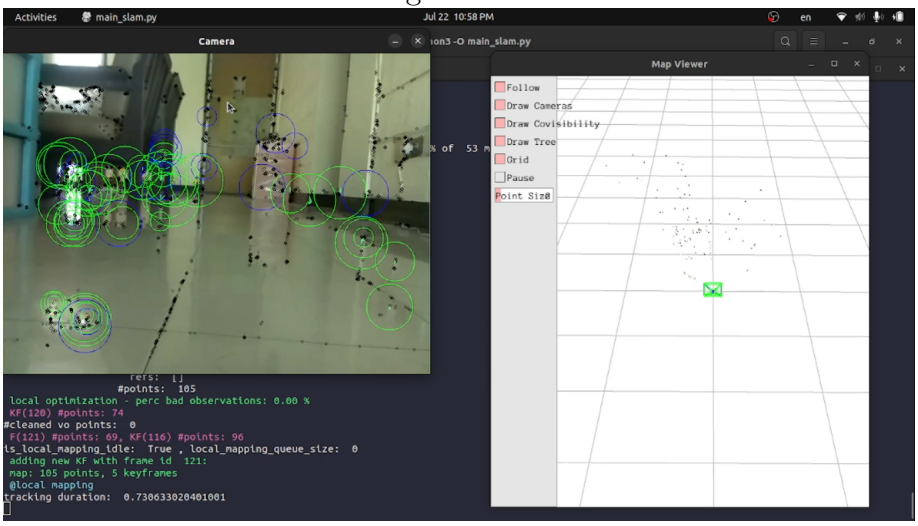


```
type=RC_DATASET

[RC_DATASET]
type=video
base_path=/mnt/ntfs/Data/code/CV/computer_vision/Labs/Data/Lab07/rc_car
cam_settings=settings/rc_car.yaml
name=car.mp4
groundtruth_file=auto
```

```
//rc_car.yaml
#--------------------------------------------------------------------------------------

# Viewer Parameters
#--------------------------------------------------------------------------------------

# Viewer.on: 1 is ON, 0 is OFF
Viewer.on: 1

Viewer.KeyFrameSize: 0.05
Viewer.KeyFrameLineWidth: 1
Viewer.GraphLineWidth: 0.9
Viewer.PointSize: 1
Viewer.LineSize: 1
Viewer.CameraSize: 0.08
Viewer.CameraLineWidth: 3
Viewer.ViewpointX: 0
Viewer.ViewpointY: -0.7
Viewer.ViewpointZ: -1.8
Viewer.ViewpointF: 500

#--------------------------------------------------------------------------------------

# Camera Parameters. Adjust them!
#--------------------------------------------------------------------------------------


#camera matrix:
# [[544.06254343   0.         321.767787]
# [   0.         548.01458  271.29350075]
```

```
27 #  [   0.            0.            1.          ]]
28 #distortion coefficients:  [0.14004592 -0.61955377
       0.02033056  0.01136857 0.45179258]
29
30
31 # Camera calibration and distortion parameters (OpenCV)
32 Camera.fx: 544.06254343
33 Camera.fy: 548.01458
34 Camera.cx: 321.767787
35 Camera.cy: 271.29350075
36
37 Camera.k1: 0.14004592
38 Camera.k2: -0.61955377
39 Camera.p1: 0.02033056
40 Camera.p2: 0.01136857
41 Camera.k3: 0.45179258
42
43 Camera.width: 640
44 Camera.height: 480
45
46 # Camera frames per second
47 Camera.fps: 30.0
48
49 # IR projector baseline times fx (aprox.)
50 Camera.bf: 40.0
51
52 # Color order of the images (0: BGR, 1: RGB. It is
       ignored if images are grayscale)
53 Camera.RGB: 0
54
55 # Close/Far threshold. Baseline times.
56 ThDepth: 40.0
57
58 # Deptmap values factor
59 DepthMapFactor: 1.0
60
61 #--------------------------------------------------------------------------------------------

62 # ORB Parameters
63 #--------------------------------------------------------------------------------------------
```

Figure 3: Own Video




```
64
65 # ORB Extractor: Number of features per image
66 ORBextractor.nFeatures: 1000
67
68 # ORB Extractor: Scale factor between levels in the
       scale pyramid
69 ORBextractor.scaleFactor: 1.2
70
71 # ORB Extractor: Number of levels in the scale pyramid

72 ORBextractor.nLevels: 8
73
74 # ORB Extractor: Fast threshold
75 # Image is divided in a grid. At each cell FAST are
       extracted imposing a minimum response.
76 # Firstly we impose iniThFAST. If no corners are
       detected we impose a lower value minThFAST
77 # You can lower these values if your images have low
       contrast
78 ORBextractor.iniThFAST: 20
79 ORBextractor.minThFAST: 7
80
```