Cartographer 操作手册

一．Cartographer 的安装

https://blog.csdn.net/ckkboy/article/details/100538093

二．参数优化

https://www.cnblogs.com/jiangxinyu1/p/12458699.html

https://www.cnblogs.com/jiangxinyu1/p/12458699.html

https://www.cnblogs.com/Ezekiel/p/9907812.html

三．源码阅读

https://www.cnblogs.com/yhlx125/tag/cartographer/

https://recomm.cnblogs.com/blogpost/8512764

四．用实际机器人建图

注：此处仅说明操作步骤和指令，详细内容请看视频课程

1. 启动机器人，运行在 huike

```
roslaunch huanyu_robot_start Huanyu_robot_start.launch
```

2. 启动 cartographer，运行在 huike

```
roslaunch cartographer_ros huanyu_rplidar.launch
```

3. 启动机器人运动控制节点，键盘和手柄控制都运行在 huike，选择一下一种方式移动机器人，遍历地图场景即可。

```
（ps 手柄）roslaunch huanyu_joy huanyu_ps2_control.launch
（Arbotix）：arbotix_gui
（键盘）roslaunch turtlebot_teleop keyboard_teleop.launch
```

4.启动 rviz，添加相关可视化的消息数据，详细请查看 RVIZ 工具集视频课程。

五．保存地图

进入机器人 map 保存地址，一下指令全部运行在远程连接的 huike 终端。

```
1. cd /home/huike/robot_ws/src/huanyu_robot_start/map/
2. sudo rm ./map.*
3. rosservice call /finish_trajectory 0
```

```
huike@huike:~/robot_ws/src/huanyu_robot_start/map$ rosservice call /finish_trajectory 0
status:
  code: 0
  message: "Finished trajectory 0."
huike@huike:~/robot_ws/src/huanyu_robot_start/map$
```

```
4. rosservice call /write_state "{filename: 'mymap.pbstream'}"
```

```
huike@huike:~/robot_ws/src/huanyu_robot_start/map$ rosservice call /write_state "{filename: 'mymap.pbstream'}"
status:
  code: 0
  message: "State written to 'mymap.pbstream'."
huike@huike:~/robot_ws/src/huanyu_robot_start/map$
```

```
5. rosrun cartographer_ros cartographer_pbstream_to_ros_map -map_filestem
   =/home/huike/robot_ws/src/huanyu_robot_start/map/map -pbstream_filena
   me=/home/huike/.ros/mymap.pbstream -resolution=0.05
```

```
huike@huike:~/robot_ws/src/huanyu_robot_start/map$ rosrun cartographer_ros cartographer_pbstream_to_ros_map -map_
/.ros/mymap.pbstream -resolution=0.05
I0729 17:38:31.913918 23446 pbstream_to_ros_map_main.cc:50] Loading submap slices from serialized data.
I0729 17:38:31.925228 23446 pbstream_to_ros_map_main.cc:70] Generating combined map image from submap slices.
huike@huike:~/robot_ws/src/huanyu_robot_start/map$ ls
map.pgm  map.yaml
huike@huike:~/robot_ws/src/huanyu_robot_start/map$
```