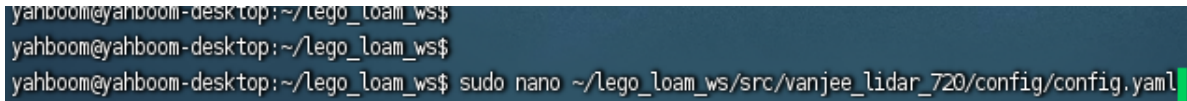# Lego-Loam mapping

## 1、Radar configuration
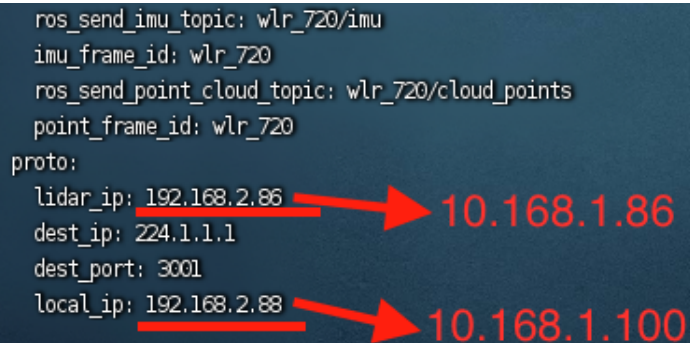
Enter the command in the terminal and press the Enter key:

```
sudo nano ~/lego_loam_ws/src/vanjee_lidar_720/config/config.yaml
```



Taking my car as an example, the Jetson nano's IP is 10.168.1.100 and the radar IP is 10.168.1.68, so modify it as shown in the picture below.



After modification, press ctrl + x and then enter y and press Enter to save.

## 2、Configure map save path

Edit file：

```
~/lego_loam_ws/src/LeGO-LOAM/LeGO-LOAM/include/utility.h
```

Enter the command in the terminal:

```
sudo nano ~/lego_loam_ws/src/LeGO-LOAM/LeGO-LOAM/include/utility.h
```



Like the picture below, change it to your own path

After the modification is completed, enter the command in the terminal：

```
cd ~/lego_loam_ws
catkin build
```
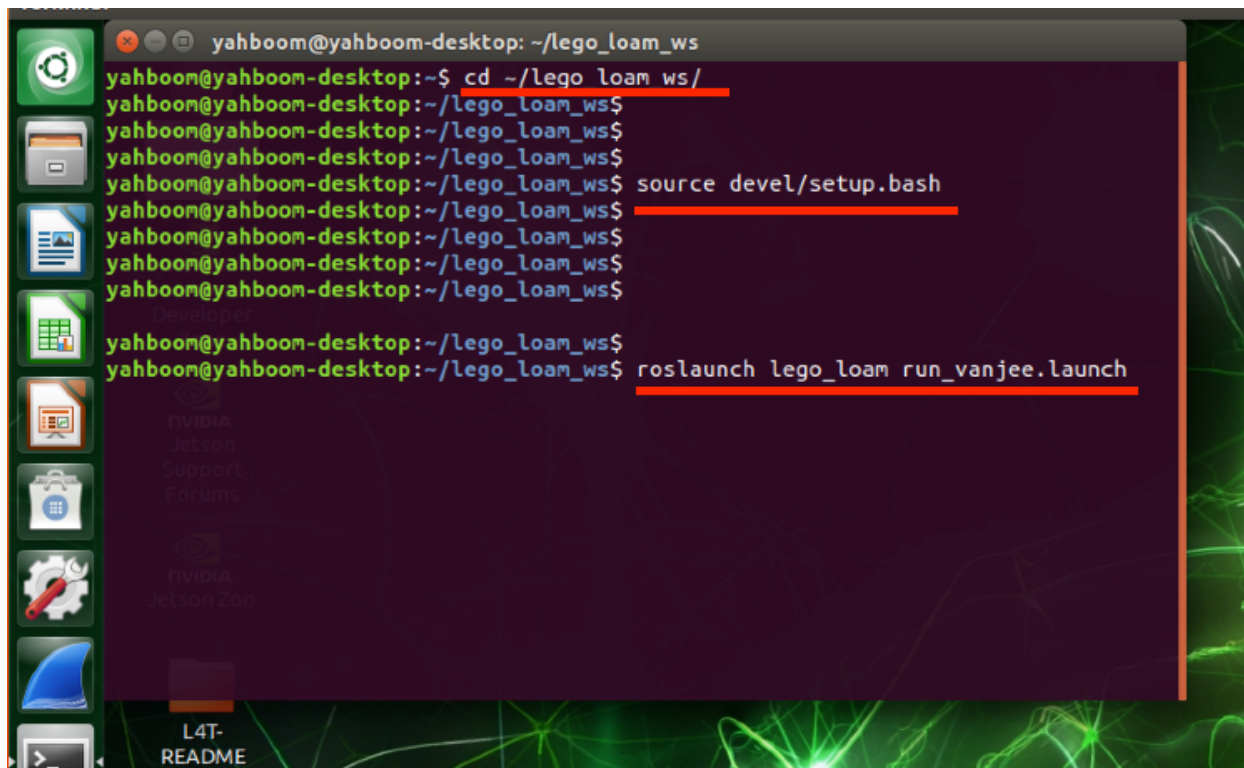
Recompile the workspace.

## 3、 Start mapping launch

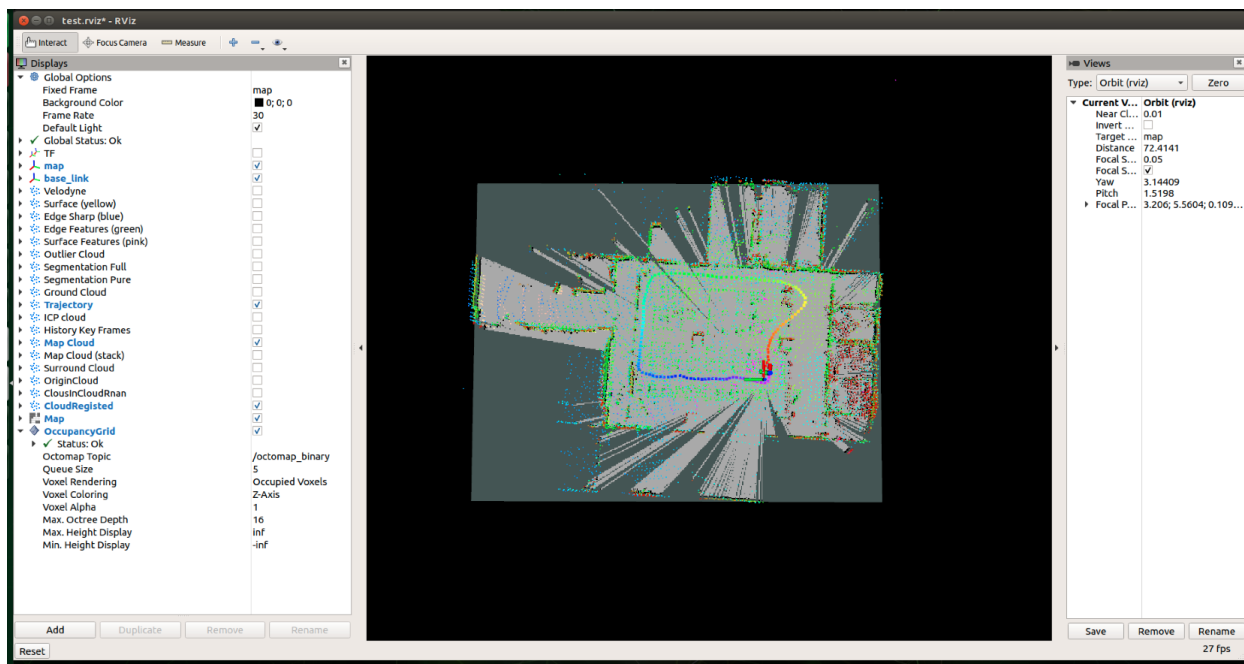1、 Run lego_loam_vanjee in real time

This requires direct operation on the host because rviz needs to be opened.

Enter the command in the terminal：

```
cd ~/lego_loam_ws/
source devel/setup.bash
roslaunch lego_loam run_vanjee.launch
```



The picture below shows the mapping results：

save map

Save via octomap and enter the command in the terminal
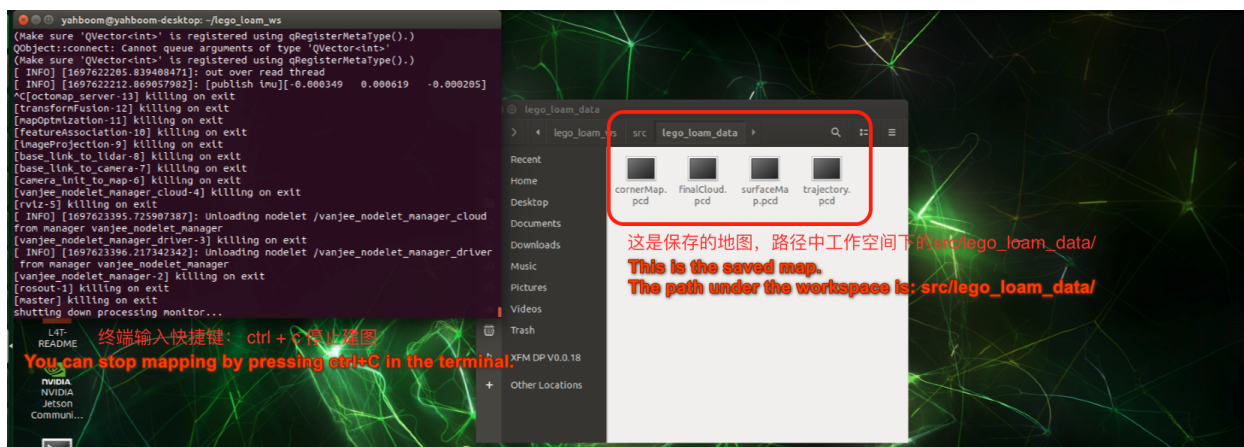
```
cd ~/lego_loam_ws/

source devel/setup.bash

rosrun octomap_server octomap_saver mapfile.bt

rosrun octomap_server octomap_saver -f mapfile.ot
```
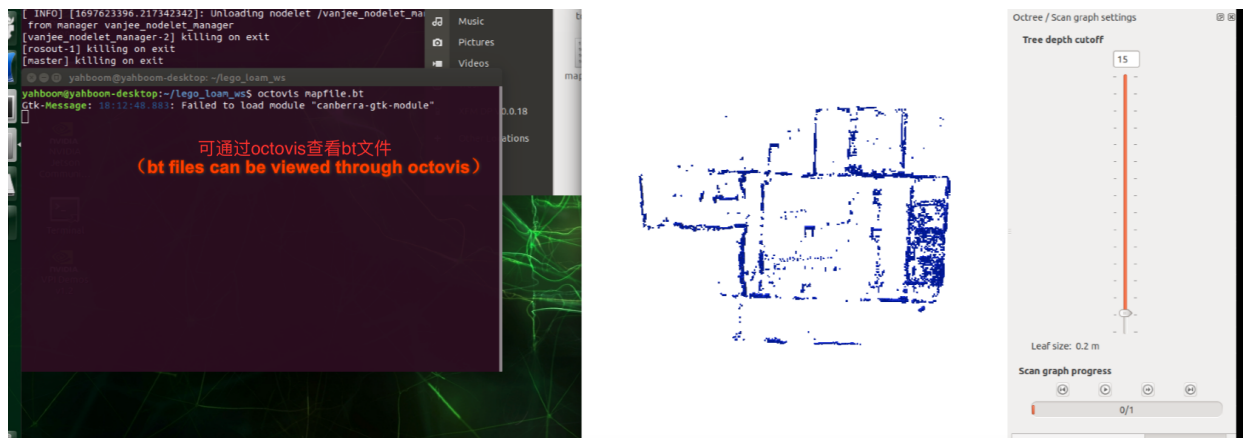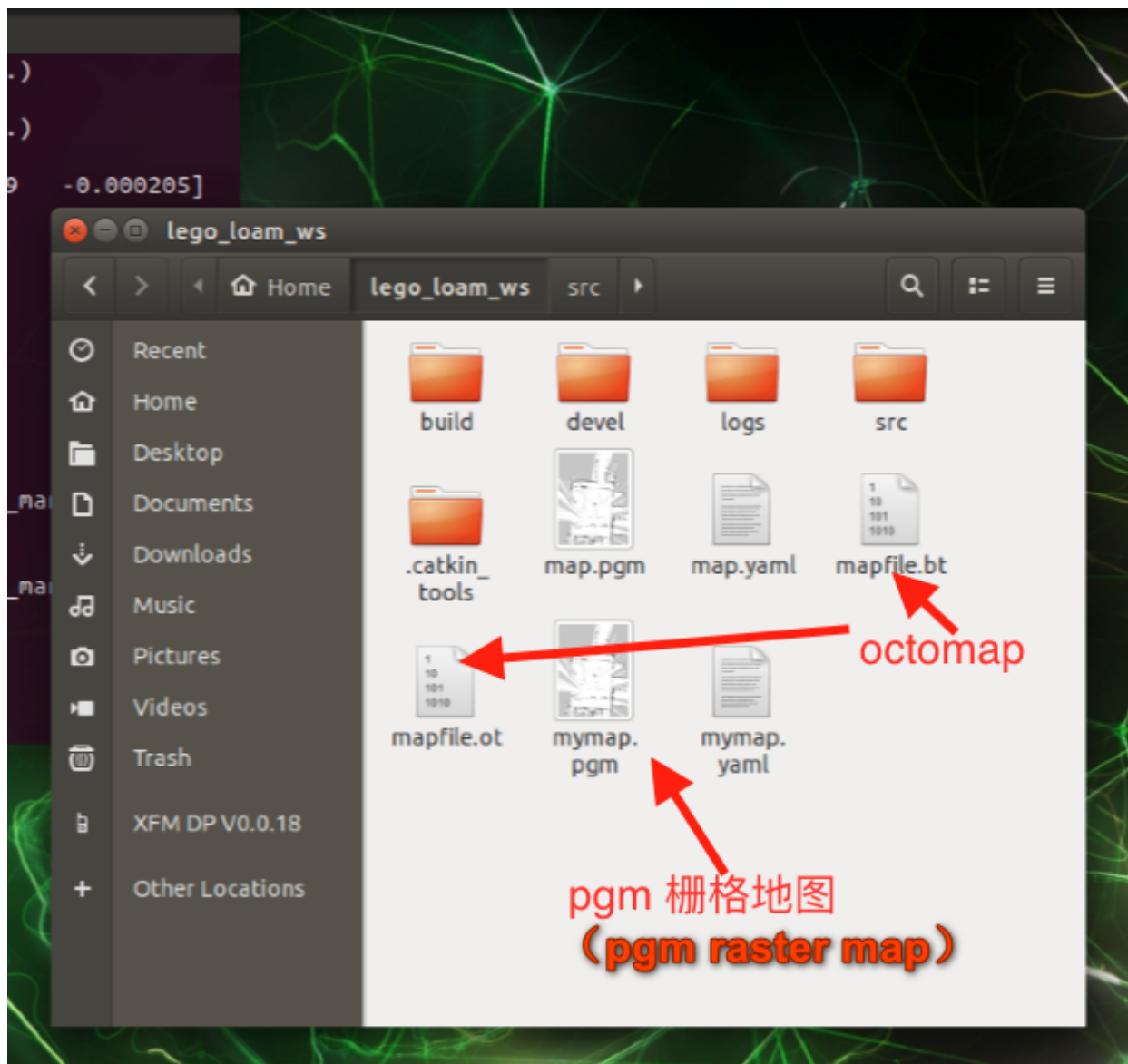
Save as a pgm map, enter the command in the terminal, mymap is the name of the map

```
rosrun map_server map_saver map:=/projected_map -f mymap
```

Saving pcd maps is relatively simple, just press ctr + c to stop mapping.

octomap

pgm 栅格地图
（pgm raster map）



可通过octovis查看bt文件
（bt files can be viewed through octovis）

## 2、Offline mapping

First, you need to use vanjee radar to collect 3D data and enter the command in the terminal：

```
cd ~/lego_loam_ws
source devel/setup.bash
roslaunch vanjee_lidar vanjee.launch
```

Then open a new terminal and enter the command in the terminal:

```
cd ~/lego_loam_ws
source devel/setup.bash
rosbag record /wlr_720/cloud_points -o test.bag
```

After controlling the radar to move around, enter ctrl + c in the terminal to stop recording packets and stop the radar from running.

Note: Both terminals must be stopped.

Note: The test.bag file path is under the workspace, that is, under the ~/lego_loam_ws folder.

To play the bag map offline, open a new terminal and enter the command:

```
cd ~/lego_loam_ws
source devel/setup.bash
rosbag play --clock test.bag --topics /wlr_720/cloud_points
```

Open a new terminal and enter the command:

```
cd ~/lego_loam_ws
source devel/setup.bash
roslaunch lego_loam run_vanjee_sim.launch
```

The method of saving the map is the same as that of online mapping, so I won't go into details here.