Readme:

The code about three-dimensional reconstruction of ear have three parts:

1. Tracking part :ORB-SLAM2
2. mapping part: DTAM
3. Visualization part: vis\_ear

1.Tracking part:

1. here are the github link of the ORBSLAM2

<https://github.com/raulmur/ORB_SLAM2>

You could use this github link to install the required package like :eigen,pagonlin and so on

And just use ORB SLAM2 to get pose from your own image,I use the stereo mode of ORB -SLAM2 to get the trajectory of the stereo camera

Whats more,you should to change a little code in ORB-SLAM2 in order to use your own image,just like

/ORB\_SLAM2/Examples/Stereo/stereo\_kitti.cc, change [ void LoadImages] according to the name of your picture,

you also need to change the xxx.yaml in /ORB\_SLAM2/Examples/Stereo

according to you camera parameters and your requirement to the number of ORB features;

Then just run it,you will get CameraTrajectory.txt in /ORB\_SLAM2/Examples/Stereo

The pose is described in the left eye coordinate system,and for the pose in ith row, let us denote the pose as T\_{i},p\_{i} is the 3D point in ith frame,and p\_{ref} is the 3D point in the ref frame,it usually is the first image you input into ORB-SLAM2

P\_{ref}=T\_{i}\*p\_{i}

By the way,you could use opencv\_reproject I provide to verify the pose your get from ORB-SLAM2,

At last ,dont forget to use command line parameters to pass mage folder and confige file path

2,mapping part:

We use DTAM to make the mapping part,you should chang the code in the folloing ways

1. pose between different image:

In class dataset: this function dataset\_->readTwc(v\_poses\_);

1. the path and the method you want to read image

In class dataset:

dataset\_->readRGB();

1. Use command line to pass path parameters:

path/to/data\_folder\_path path to trac\_file\_path

4)you also need to change setting.yaml ,like camera parameters,width and height of image,and the depth you want search

1. vis part:

You can easy use this code to vis the point cloud of depth data we get from DTAM