Instructions

Download:

First, download the zip file and extract it. The whole dataset we used is stored on the following webpage.
https://drive.google.com/drive/folders/167TgiMA92hYJBI8kifVkG1AW6XkJeI8t?usp=sharing

Required packages:

- Python 3.7+
- open3d==0.11.2
- opencv-python==4.4.0.46
- Keras==2.3.1
- matplotlib==3.3.3
- for detailed list of packages check requirement.txt

Date folder structure:

First_pipeline
- layers.py
- fepth_map.py
- ICP.py
- rigid3D.py
- first_pipeline.py

Second_pipeline
- second_pipeline.py
- test_parallel.py

Third_pipeline
- third_pipeline.py

models (two pretrained models)
- nyu.h5
- kitti.h5

Test_Images(Input images and point clouds)
- parallel
- teapot1
- teapot2
- third_pipeline

Final_results(Merged point clouds and results for each pipeline)
- First_pipeline
- Second_pipeline
- Third_pipeline

Test
- depth_quality.py

- ground truth depth maps

compute_pc.py(generate point clouds)
requirements.txt

Python scripts for each pipeline

- To run the first pipeline, use command “cd” to go to the directory of folder First_pipeline(as shown in the date folder structure).
  A. Use ICP to merge point clouds
     python first_pipeline.py icp
  B. Use rigid body transformation to merge point clouds
     python first_pipeline.py rigid
- To run the second pipeline, use command “cd” to go to the directory of folder of Second_pipeline.
     python second_pipeline.py
- To run the third pipeline, use command “cd” to go to the directory of folder of Third_pipeline.
     python third_pipeline.py