

## Project13 Week2

This week, we completed the construction of two paper projects according to the original plan and timeline. Our next step is to finish running the required dataset for the project and obtain some results before the midterm presentation on December 3rd.

Mengyang Li: I encountered many problems while building the project step by step according to the readme, but eventually solved them all.

1. My computer runs on MacOS, whereas the original project was developed for Windows. Initially, I tried to install the dependencies required by the project using homebrew in MacOS and build the project, but encountered many compatibility issues. Later, I switched to using docker to build the project on my Macbook, and finally succeeded.

2. The project requires the use of boost version 1.60, which I couldn't download. I tried various methods, including using homebrew and inputting the URL for boost 1.60 in the dockerfile to extract it, but all failed. In the end, I tried using the latest version of boost to build the project, and it didn't give any errors.

3. I encountered issues with finding some files during the project build. I resolved this by declaring the files to be mounted when creating the docker container.

4. I faced issues with the TUM-VI dataset website being inaccessible for several days while trying to download it. I opened an issue on GitHub and sent an email to the original authors of the paper. Fortunately, the website issue has just been fixed, so this problem is also resolved.

The next step is to test the algorithms of the paper using the newly downloaded dataset, and I will present the results in the presentation I upload on December 3rd.

HonglingWu:

First, i install the missing nodelet package, VTK files and libusb-1.0 package. Then i check ROS Installation and find that rosdep is not properly set up in my system's path. After installing rosdep, i run the initialization command again to successfully initialized rosdep and updated it.

After that i try to build the project but some errors appears which seems related to the Point Cloud Library (PCL) and its interaction with my system's C++ standard library. Thus i first check the version of the C++ compiler on my Ubuntu system and ensure it's compatible with PCL 1.10. Then i check which version of PCL is currently installed on my system. And then see what version of PCL is available in the Ubuntu 20.04 repositories (which ROS Noetic is based on). It seems that i have PCL version 1.10.0 installed on my Ubuntu system, and this is the same version that is available as the candidate in the Ubuntu repositories for Ubuntu 20.04 (Focal Fossa).

Since i have the appropriate version of PCL installed, and it is the version compatible with ROS Noetic, the issues i am encountering during catkin\_make are likely not due to a version mismatch between PCL and ROS. It could be related to specific configurations in my project's CMakeLists.txt or other compatibility issues. Then i check the CMakeList.txt and find that there are compatibility issues with PCL (Point Cloud Library) and the C++ standard version. Hence, i solve the problem by update CMakeLists.txt Content:

```
set(CMAKE_CXX_STANDARD 14) set(CMAKE_CXX_FLAGS
"${CMAKE_CXX_FLAGS} -O3 -Wall -pthread") # -Wextra -Werror
set(CMAKE_BUILD_TYPE "RELEASE")
```