1 What I've done

- Cleaned up my code
- Worked on report
- Checked if Vicon is causing the poor depth readings (doesn't appear to have any effect).

2 Parts of report to look at

- Results (page 38)

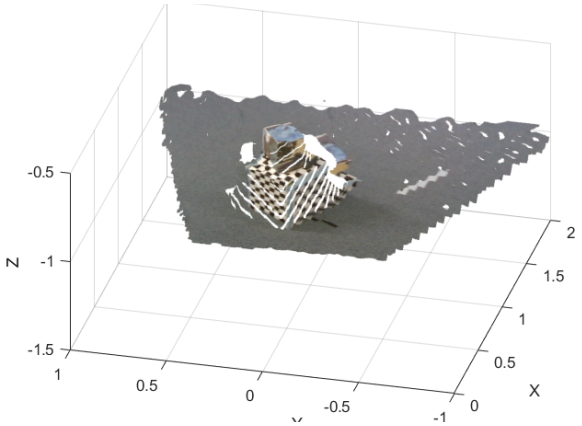
3 Questions

- Should I get another dataset? If I do I can try to vary the amount of structure and/or texture. The carpet is back so I can use that for more texture (although the samll box also had a lot of texture and is now gone). I'm not sure if I'll have enough space in the report to talk about it though, I'm about at the page limit even though I haven't finished writing up all of the sections.
- Should I test the algorithms on the external dataset?
- At this point is it worth trying to get ICP and/or the Photometric error method working? (ICP shouldn't be too difficult using the built-in MATLAB stuff. The photometric error thing will be harder).
- Do you still want me to have a look at the control data and how it compares to the actual trajectory?
- Are we going to try anything with closing the loop/other mapping stuff?

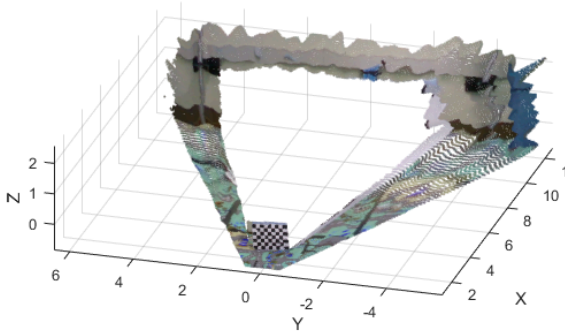
4 Comments

- I ended up doing the coordiante transforms before saving the trajectory to avoid vaing to go through each frame to get the proper rotation for every translation.
- It doesn't seem like the Vicon is the issue with the depth. My guess is either motion or angle.

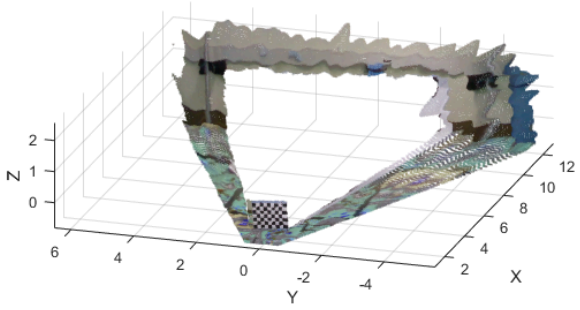
- I recorded a rosbag looking at how the RealSense deals with angles and distances, but it was too big to fit on my sd card. I'll bring in my external hard-drive and start processing it sometime in the next few days.



(a) Example point cloud taken from RealSense attached to quadcopter



(b) Point cloud taken of scene from still RealSense camera, without Vicon on



(c) Point cloud taken of scene from still RealSense camera, with Vicon on

Figure 1: Investigating soures of error in depth measurements via visualizing point clouds. Note that all point clouds have been aligned with the quadcopter-fixed frame.