ELEC5660 Project 2 Phase 1 Report

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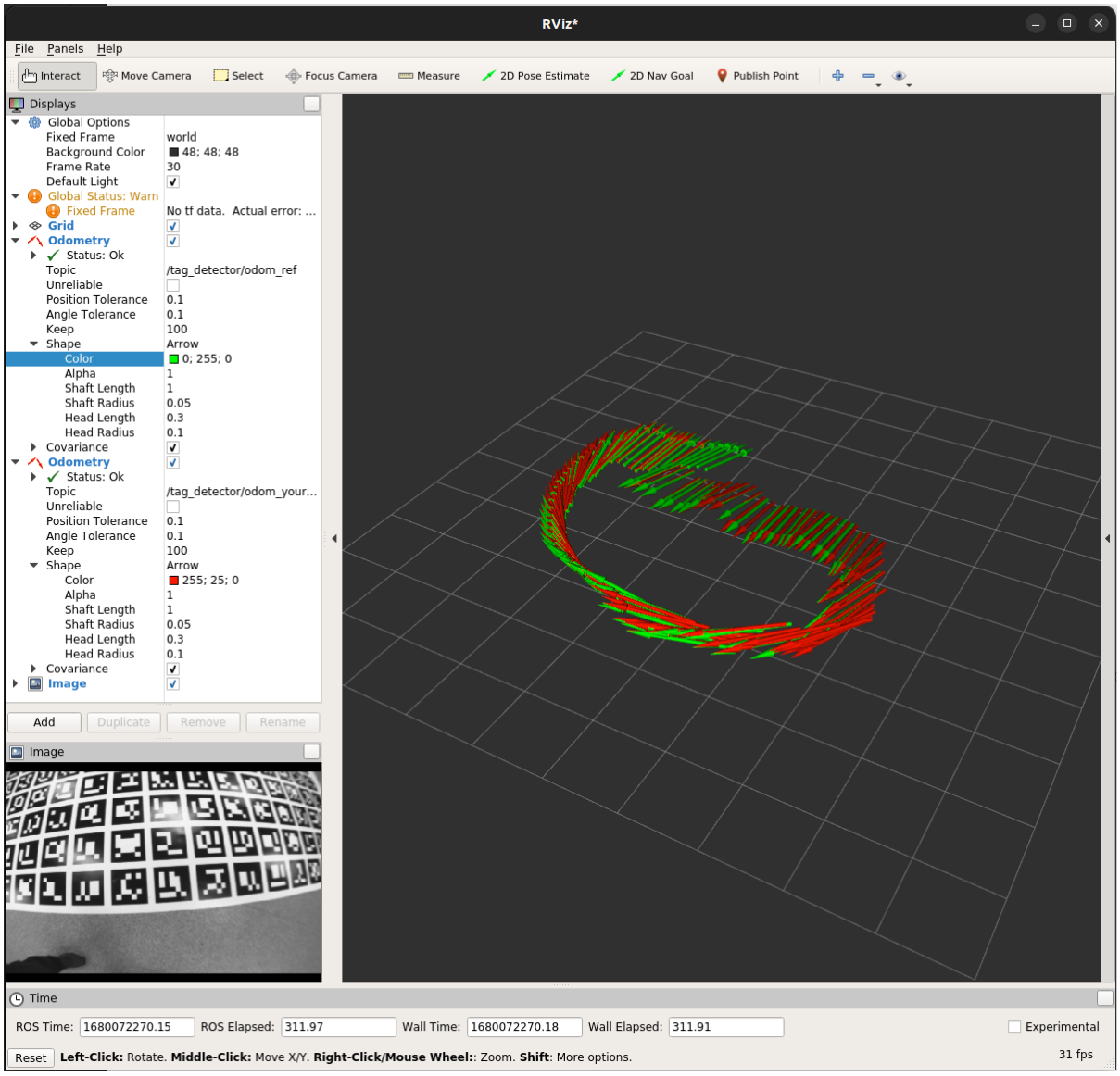
Figures plotted by rviz



Green is the ref odemetry Red is my work obemetry

Statics about the result

R matrix RMS Error = 1.2171*10^-5

T matrix RMS Error = 3.74318*10^-5

Descriptions about your implementation.

Docker environment:

As I stated in the issue, I did not use the VNC machine and this toolchain seems to be working fine. I am using also the VSCode docker extension where attach to and operate docker and the file in the docker is much easier.

Implementation

The main pipeline is initializing the K and A matrix by using the K and t given and tansfer from cv element to eigen element. Then define A using the pts and the equation in the lectrue notes where you need to solve Ax=0 using JacobiSVD to get the x matrix. After which H^ can be defined and process to define the related element and solve the USV svd problem. At last R and T can be calculated out.

Hacking

I add `#include <opencv2/core/eigen.hpp>` to the in the include list to let the cv::undistortPoints work since it keep poping error telling me that it is not found in the opencv package.

Others

RVIZ Fixed Frame need to be changed to 'world' to visualize properly.