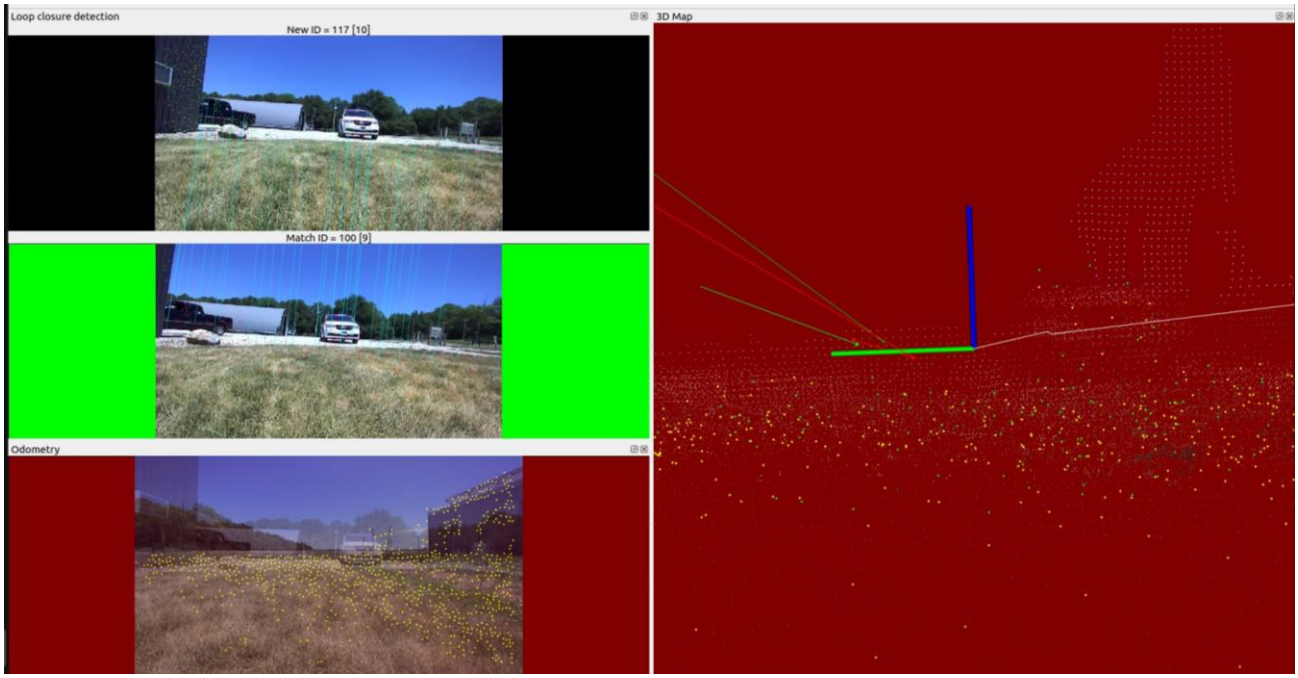
RTABMap Report

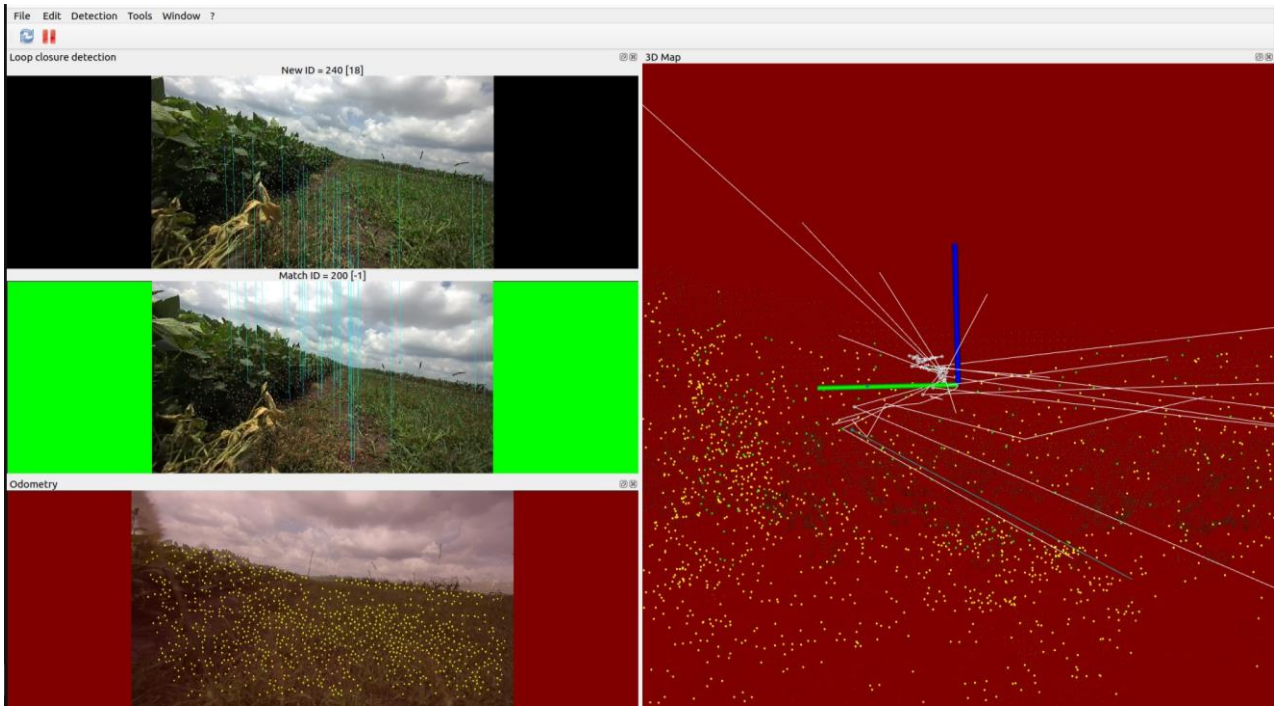
Netid: ah64

1. **Run RTABMap on rosbag1 and rosbag2. Add the 3D maps to your report**

Rosbag1:

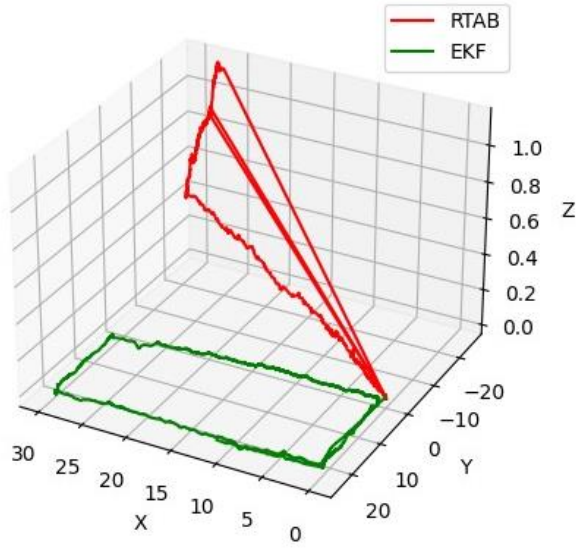


Rosbag2:

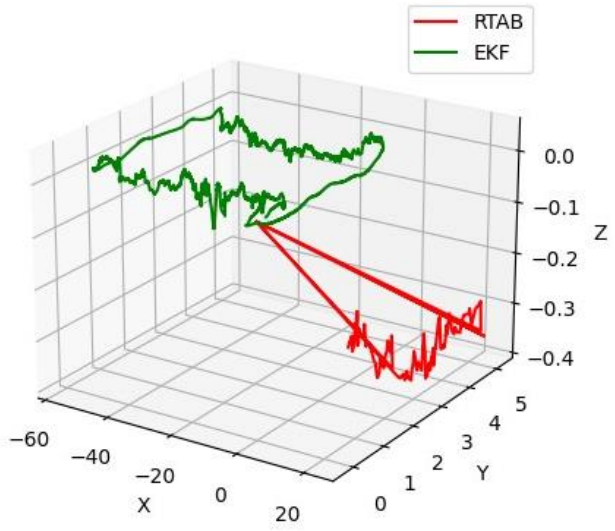


2. **Implement a ROS node to get the coordinates (x,y,z) of the estimated trajectories by RTAB map (/rtabmap/odom) and the ground truth trajectories (/terrasentia/ekf). Store the data in .txt files. Add the 3D plots of these trajectories to your report**

Rosbag1:

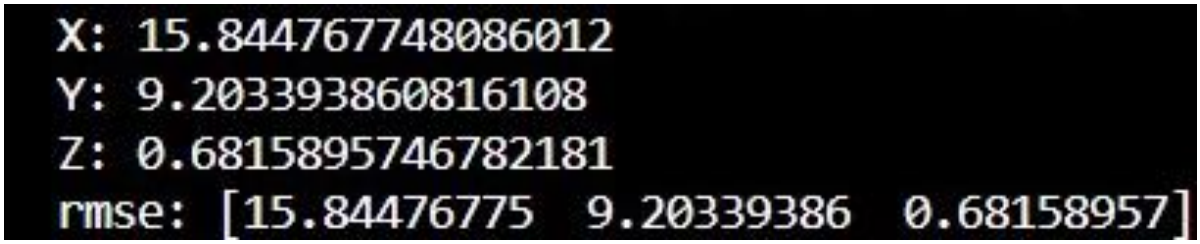


Rosbag2:

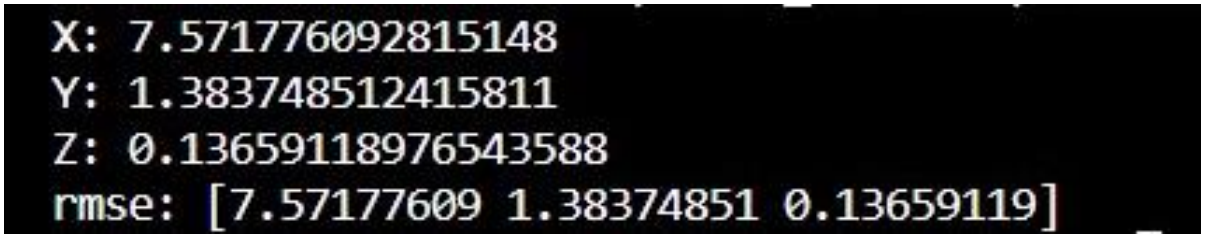


3. **Compute the Root mean square error between the estimated trajectories and the 3 ground truth trajectories.**

Rosbag 1:



Rosbag 2:



4. **Discuss the results**

- In the 2 uploaded graphs, the first one is a rosbag video collected in campus and the other was collected in a cornfield.
- As we can see in the above 3D plots, in both the images that the ground truth trajectories are plotted in a perfect manner according to the motion of the robot. It goes in a proper rectangular motion. But the estimated trajectory is a bit haphazard due to all the objects that perceives from the background.
- Thus we can say that the values generated from the 2 graphs give a rough estimate of the overall path of the robot in both rosbag scenarios.
- The Root mean square values that are generated are higher for rosbag1 compared to rosbag2