Localization

Goal: The goal of the project is to localize a car driving in CARLA Simulation for atleast 170 meters from the starting position and never exceeding a distance position error of 1.2 meter. Localization of the car is to be accomplished by using point cloud registration matching between the map and the scans localization of the car.

Main Steps in the implementation

Step1: Make lidar filter Scan using Voxel Filter

Step2: Finding pose transform using ICP or NDT matching.

Step3: Transform the Scan so that it aligns with the ego's actual pose and render that scan.

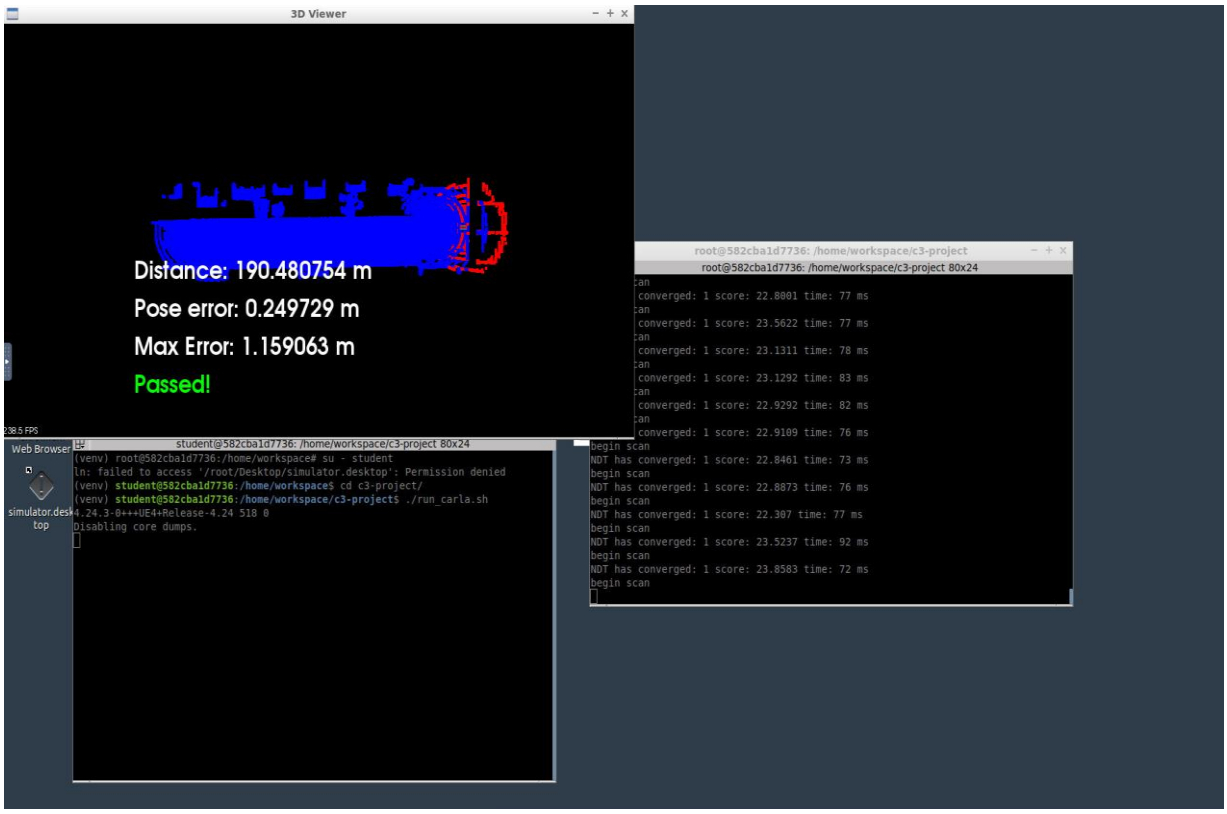

Fig- Scan Matching Localization using NDT

Result: Scan matching performed using NDT. The car was localized for 190 meters with pose error within the set limit.