



**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

SSY235 - DECISION MAKING FOR AUTONOMOUS SYSTEM

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TIAGo tutorials (Autonomous Navigation)

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Assignment - 5

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# 1 Create a map with gmapping

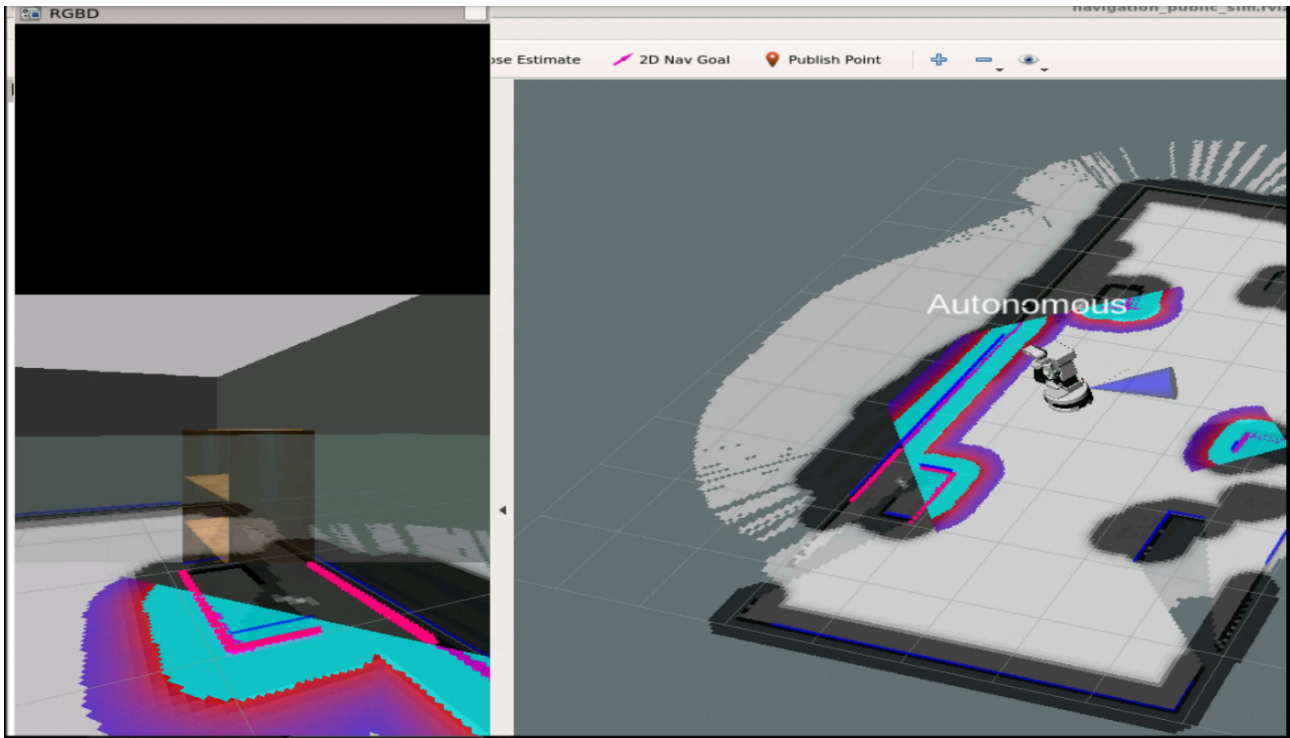


Figure 1: Result of simulation map (right) and RGBD view (left)

After doing the tutorial, we could know that we could create the map from the LIDAR attached on the virtual robot. We could also view it from the point of view of the RGBD camera. The tutorial did not seem to have any deficiencies.

## 2 Localization and path planning

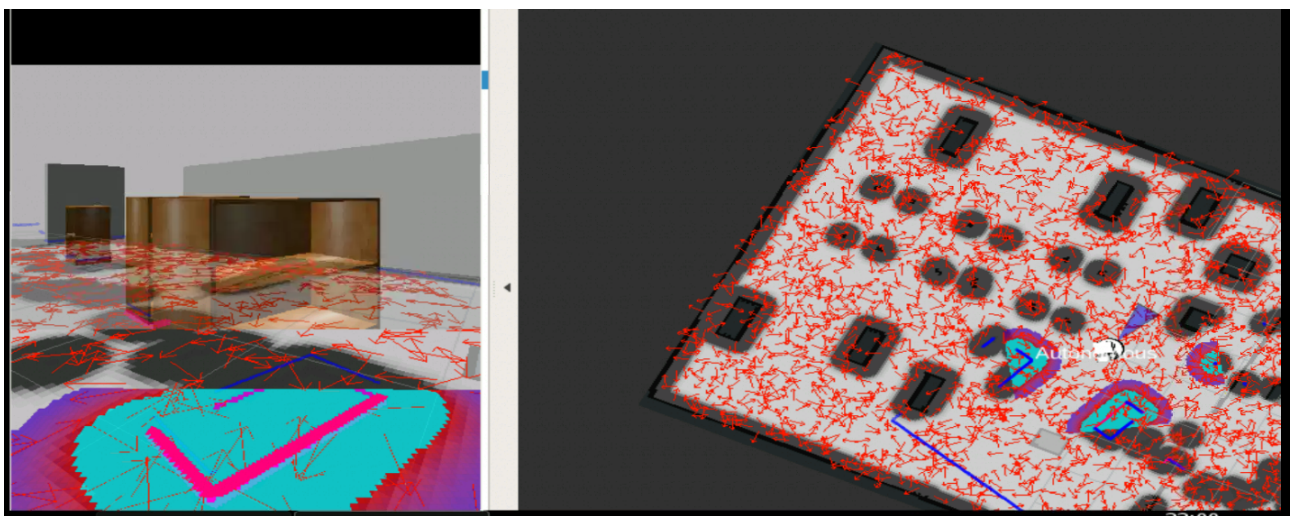


Figure 2: Result of simulation map (right) and RGBD view (left)

Using the global localization command, we will have the all possible localization of the robot as intended by the tutorial. By moving the robot with teleop command, we will clear all the

false localization of the robot. And as intended by the tutorial, by using the **clear costmaps** command, we will have the map cleared as in figure 3.

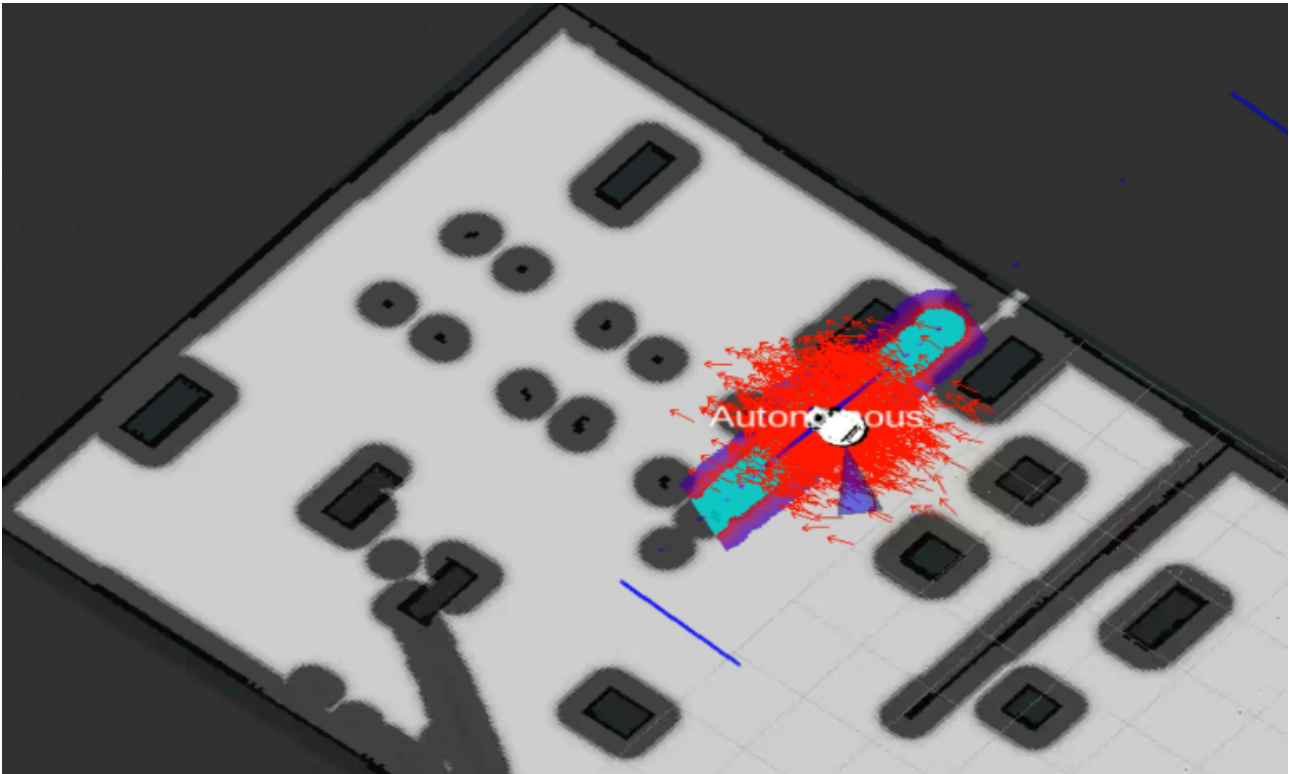


Figure 3: Cleared map with its 2D pose estimate

### 3 Autonomous navigation with rviz

By pressing the **2D Nav Goal** button in the rviz map, the robot will automatically choose the best path so that it can reach the intended point. In this tutorial, there seems to be no error.

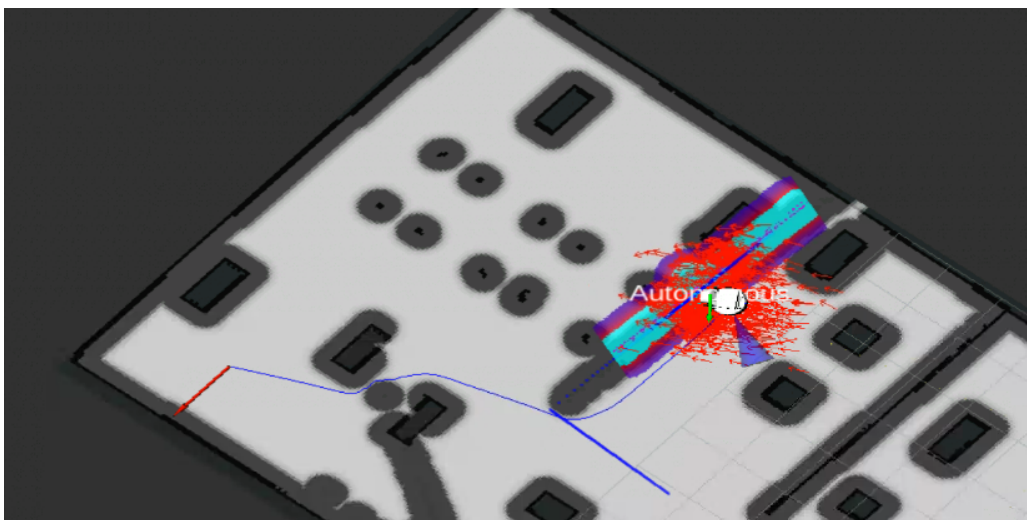


Figure 4: Automatic global path planner