



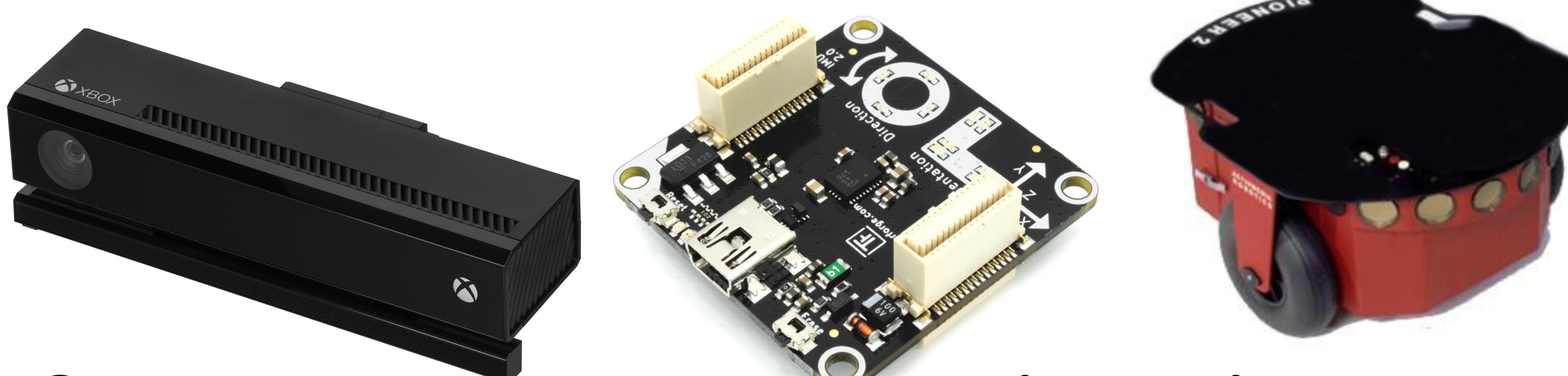
Autonomous Robot Patrol System

Motivation

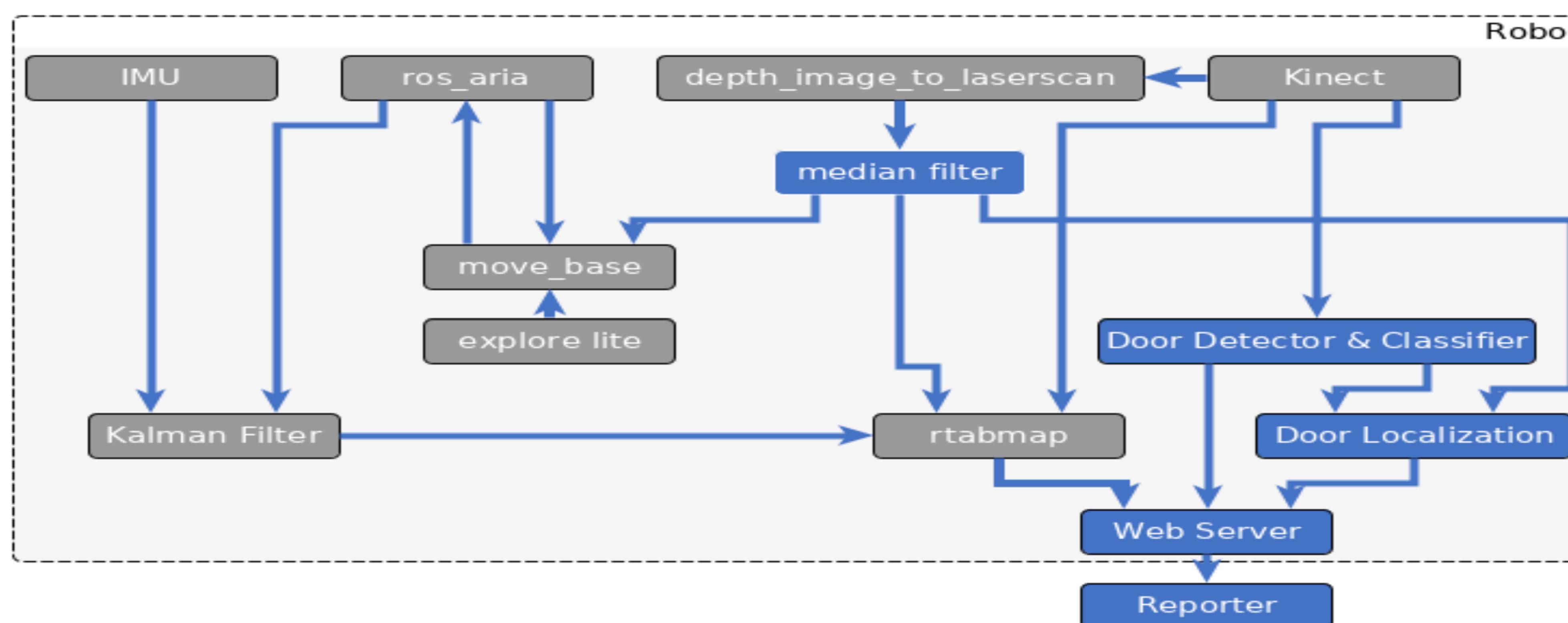
Achieve an autonomous guarding agent by:

- 1) Implementing visual **S**imultaneous **L**ocalization **A**nd **M**apping
- 2) Detecting and semantically labeling doors using Deep Learning

Hardware



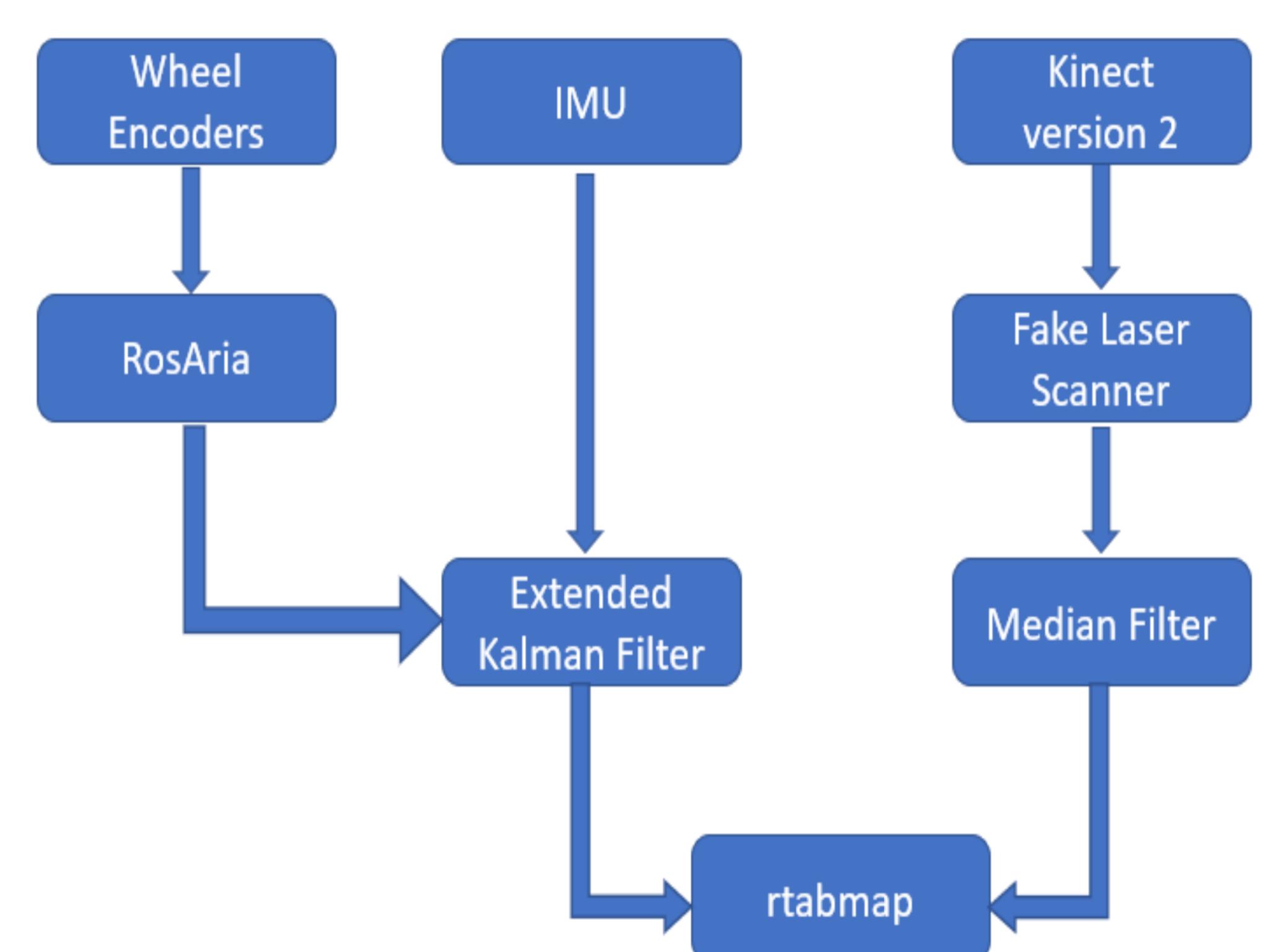
System Description



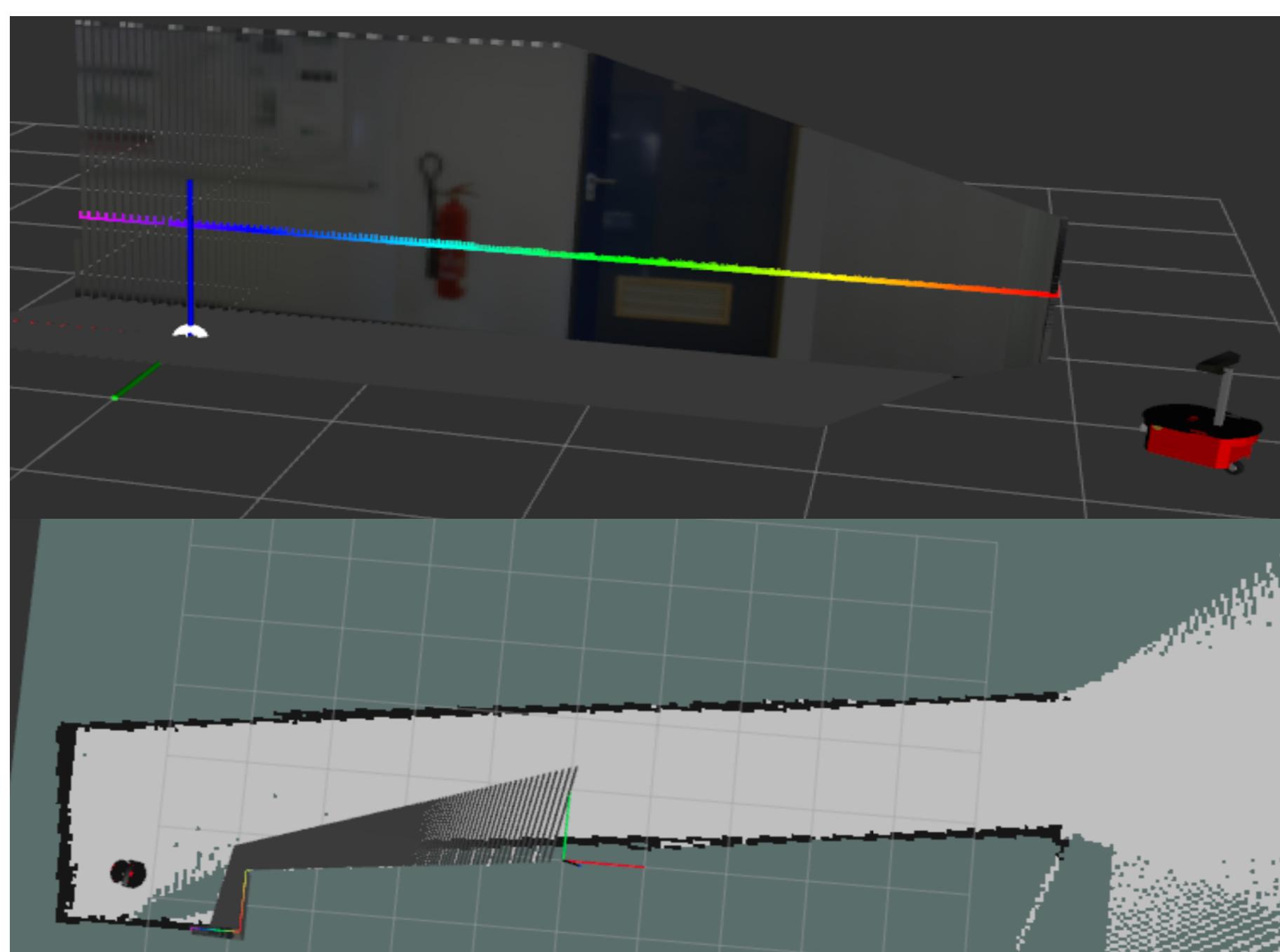
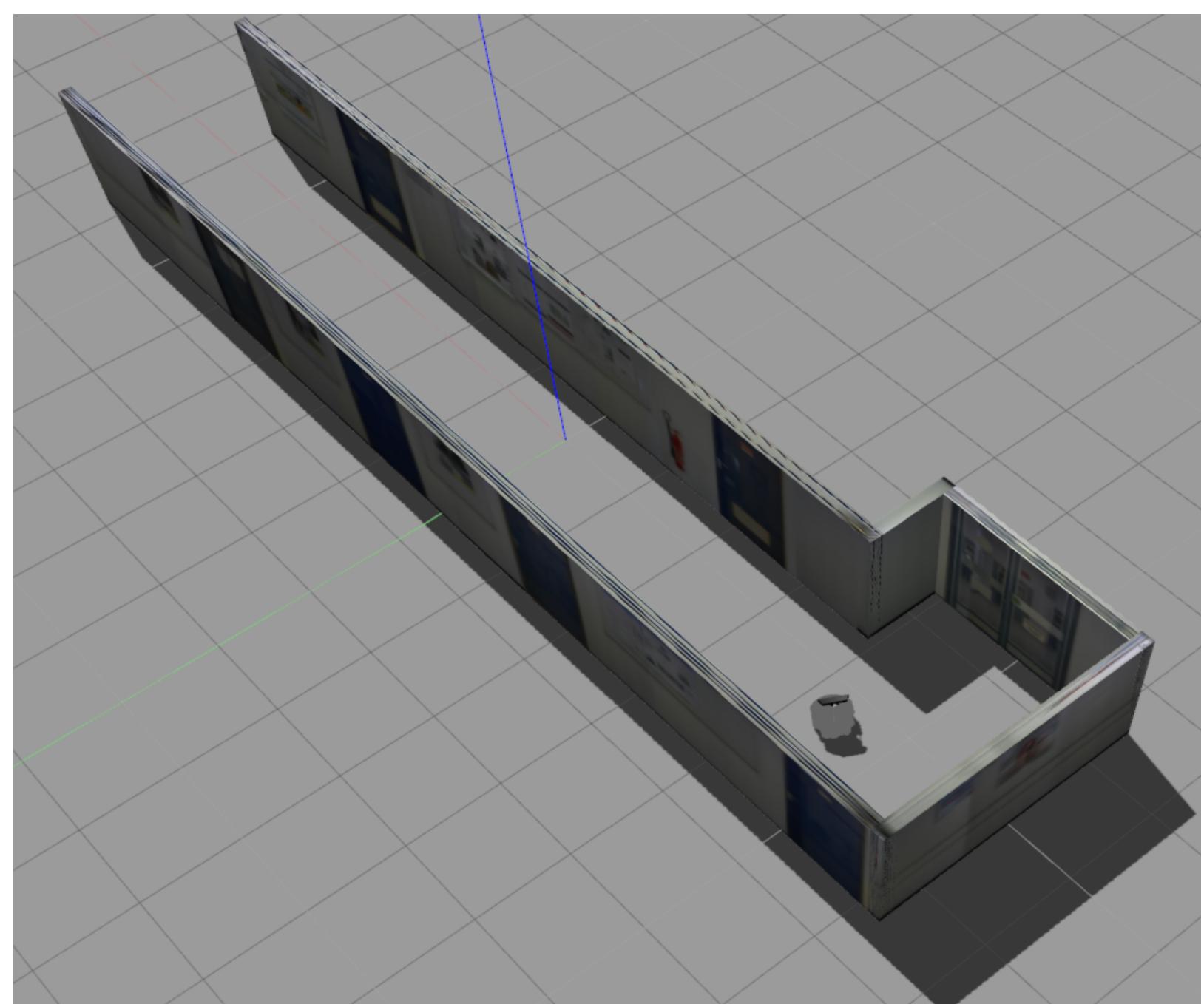
Software

- 1) YOLOv3 (You Only Look Once)
- 2) RTAB-Map (Visual SLAM)

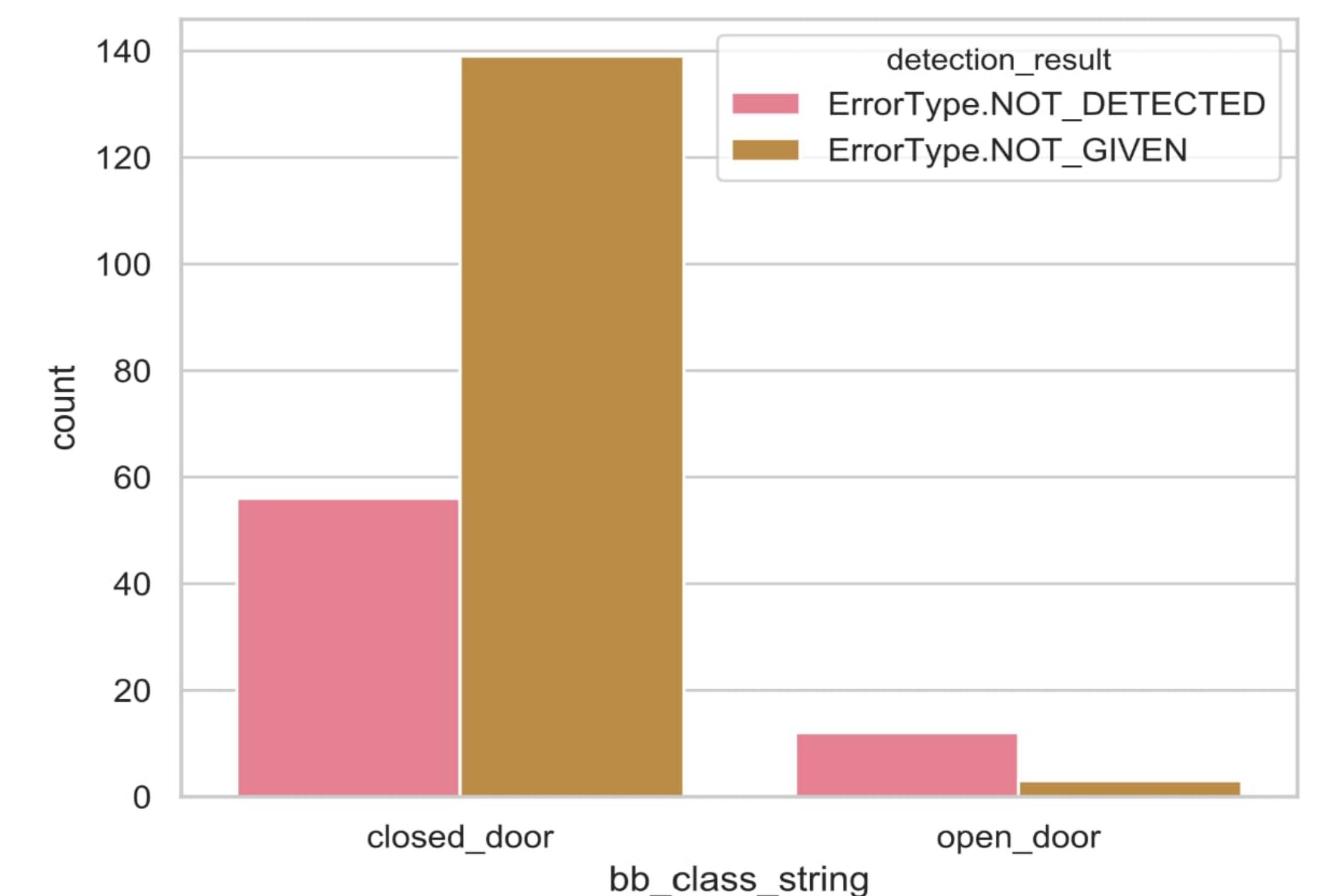
SLAM



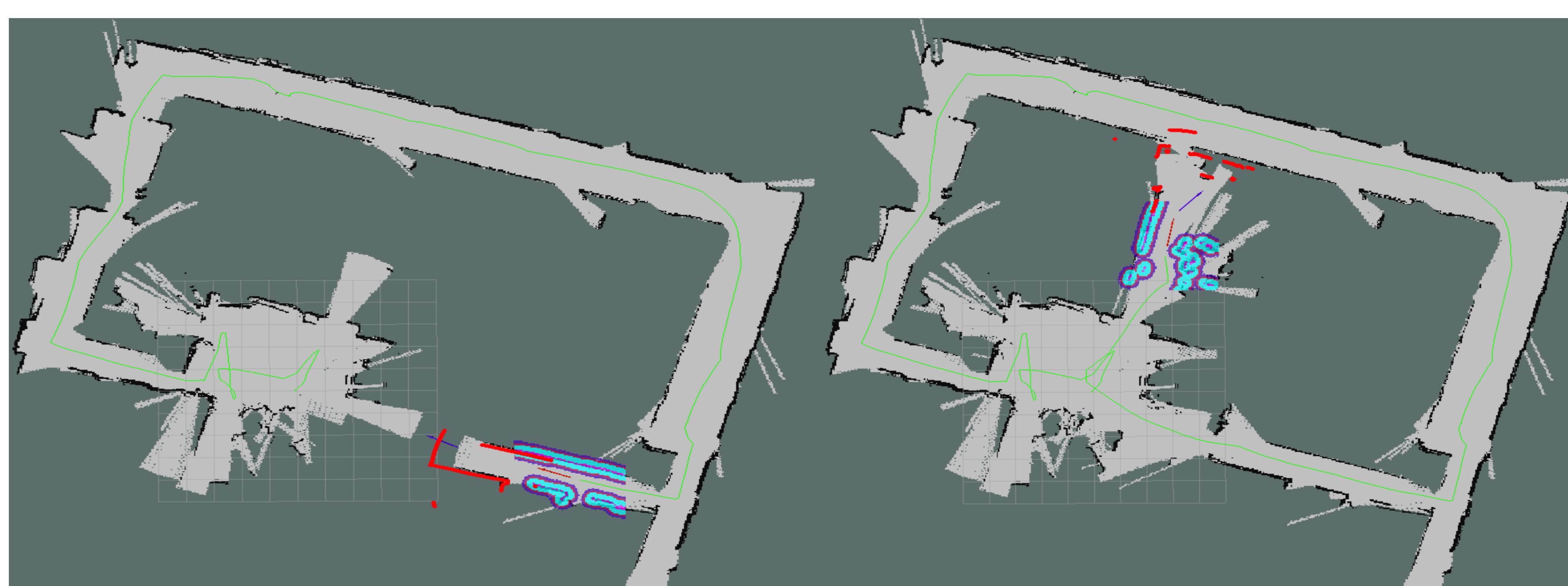
Simulation



Evaluation



Loop Closure Results



Reporter

