Parameter Overview

October 11, 2021

Introduction

This file contains direct links to the downloads necessary to run the benchmark.

- The provided datasets and ground truth (rosbags and txts) can be downloaded here:

  Rosbag Best-Case and Ground truth Best-Case

  Rosbag wheel odometry challenge and Ground truth wheel odometry challenge

  Rosbag floor facing camera challenge and Ground truth floor facing camera challenge

  Rosbag RGB-D camera challenge and Ground truth RGB-D camera challenge

  Rosbag LIDAR challenge and Ground truth LIDAR challenge

- All necessary transformations from camera image (camera_color_optical_frame, mv_25003609, camera_aligned_depth_to_color_frame) / camera imu (camera_imu_optical_frame) / laser (laser_front) to robot base (base_footprint) are provided via broad.py. Due to the fact that some algorithms require these transformations within a distinct time, we did not use the tf topic to provide this data.
- The image of the map as well as the description file in yaml format.

The guide for installation and using the gui can be found at GUI.
This file contains the parameters we tuned for each specific algorithm on the next page.
All parameters, which we changed from the default values, are listed.

Method	Parameters	Values
RTABMap	frame_id	base_footprint
	rgbd_depth_scale	2000
	rgbd_odometry/Reg/Force3DoF	true
	rgbd_odometry/Odom/Strategy	0
	rgbd_odometry/Vis/CorType	0
	rgbd_odometry/Vis/CorGuessWinSize	40
	rgbd_odometry/Vis/MaxFeature	5000
	rgbd_odometry/Vis/EstimationType	1
	rtabmap/Reg/Force3DoF	true
	rtabmap/Reg/Strategy	1
	rtabmap/Optimizer/Slam2D	true
	rtabmap/Optimizer/Strategy	1
ORB-SLAM2	Camera.fx	927.7444458007812
	Camera.fy	928.2129516601562
	Camera.cx	655.3325805664062
	Camera.cy	361.226318359375
	Camera.width	1280
	Camera.height	720
	Camera.bf	75.014456792
	ORBextractor.scaleFactor	1.25
	ORBextractor.iniThFAST	20
	ORBextractor.minThFAST	6
	ORBextractor.nLevels	8
	ORBextractor.nFeatures	1000
HECTOR SLAM	base_frame	base_footprint
	odom_frame	base_footprint
GMAPPING	odom_frame	odom
	base_frame	base_footprint
	maxUrange	8.0
	maxRange	8.0
	linearUpdate	0.1
	angularUpdate	0.1
	temporalUpdate	1
	resampleThreshold	0.5
	xmin	-30
	ymin	-30
	xmax	30
	ymax	30
	delta	0.02
	particles	40
AMCL	odom_model_type	omni-corrected
	max_particles	3000
	kld_err	0.02
	update_min_a	0.20
	resample_interval	1
	transform_tolerance	0.5
	laser_max_range	8
	laser_max_beams	180
	odom_alpha1	0.1
	odom_alpha2	0.1
	odom_alpha3	0.1
	odom_alpha4	0.1