DreamVu

Obstacle Detection & Obstacle Avoidance - PAL Mini

Release notes v3.1

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Summary

This version of the PAL Mini Obstacle Detection & Starter Kit (ODOA) software has software v3.1 has improvements over the detection quality for different sized obstacles, performance and latency improvements. This also includes pre-configuring the parameters, bug fixes and other minor changes in the package to provide robust performance.

Improvements

1. The laser scan topic is now published at a minimum of 10 Hz on Jetson NX.
2. The default parameters in ODOA.yml (depth_context_threshold and depth_context_refinement) are pre-configured for accurate obstacle detection.
3. Performance in low lighting conditions and dark conditions. Automatic exposure is enabled by default by which the PAL Mini camera automatically adjusts to different types of illumination conditions including dark as well as over-exposed scenes.
4. Close-Obstacle detection in near regions. Obstacles that are close to the robot will get detected. The sensitivity to such obstacles can be controlled using the stereo_threshold parameter in ODOA.yml.
5. Filtering of shadow points and singular noisy points in the laserscan is added. These features are enabled by default in the ROS topics *scan* and *scan_filtered* respectively.

Changes

1. Explorer is removed from this version. Laser scan can be read as a ROS topic or in a code sample.
2. Users need to set the horizontal FOV by cropping out the occlusion created by the robot in the frame. By default, robot occlusion is set to the 1/3rd of the field-of-view of the panorama. The odoa_start_hfov and odoa_end_hfov are set to 0° and 240° respectively.

Bug Fixes

1. Crashes due to SelectTimeout() errors are fixed in this version.

Future Releases

1. Auto selection of ODOA.yml parameters based on the scene lighting conditions.