

Automatic mapping and filtering tool: From a sensor-based occupancy grid to a 3D Gazebo octomap

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Abstract

© 2017 IEEE. Robot simulations nowadays provide significant support in testing new algorithms for robotic systems for a broad area of tasks, including navigation, mapping, and SLAM. Within a simulation, special attention should be paid for providing algorithms with realistic testing environments that are to be further used for robot navigation. This paper presents an automatic tool that allows creating realistic landscapes in Gazebo simulation, which are based on results of real world sensor-based exploration. The tool provides automatic filtering and importing of an occupancy grid map into Gazebo framework as a heightmap.

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Keywords

Gazebo, heightmap, map filtering, occupancy grid, octomap, ROS

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