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Abstract

In the medical sector, and mainly for dependent patients with movement disabilities, controlling an electric powered wheelchair could prove a challenging task. Thus, implementing an autonomous navigation algorithm for static/dynamic environments could provide an easier way to move. Within this context, this paper presents innovative work on integrating a novel method of image-based geolocalization in a powered wheelchair. The work focuses on integrating the geolocalization algorithm within the Robot Operating System (ROS) framework. Tests are being conducted using an omnidirectional camera fixed on an automated wheelchair control system. Our results show low control errors both in straight line and curved paths. The proposed algorithm was developed by the ESIGELEC laboratory.

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Index Terms

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Keywords

Image-based geolocalization, automated robotic wheelchair, omnidirectional vision sensor.