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Telecontrolled Service Robots for Increasing the Quality of Life of Elderly and Disabled

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Abstract : This paper represents methods for improving the efficiency and precision of service mobile robot. This robot is used for increasing the quality of life of elderly and disabled people. The key concept of the proposed Intelligent Service Mobile Robot is its easier adaptability to achieve services for a wide range of Elderly or Disabled Person's needs, by performing different tasks for supporting Elderly or Disabled Persons care. We developed robot autonomous navigation and computer vision systems in order to recognize different objects and bring them to the people. Web based user interface is developed to provide easy access and tele-control of the robot by any device through the internet. In this study algorithms for object recognition and localization are proposed for providing successful object recognition and accuracy in the positioning. Different methods for sending movement commands to the mobile robot system are proposed and evaluated. After executing some experiments to show the results of the research, we can summarize that these systems and algorithms provide good control of the service mobile robot and it will be more useful to help the elderly and disabled persons.

Keywords : service robot, mobile robot, autonomous navigation, computer vision, web user interface, ROS
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