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Survey on Mobile Robot Motion

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ABSTRACT

Navigation is an important task in the mobile robotics area. The goal of mobile robot navigation is to reach a prescribed destination or a specific destination, following a closely or predetermined trajectory as much as possible. Mobile robots carry out many tasks such as patrol, medical rescue, planetary exploration, material handling, and other tasks. Therefore, intelligent flexible robots must be able to move independently in different environments to the final position. In this paper, a survey on the navigation of mobile robot motion is introduced.

Keywords: *Navigation; Mobile Robots; Motion*

RESEARCH HIGHLIGHTS

Nowadays, robots are used for many purposes, such as the automation of various industrial and commercial sectors, and they are an ideal alternative to manpower. Robots are essentially automated, continuously modernizing platforms, equipped with actuators and sensors operating under the control of a computing system, through which a robot performs its tasks by directing movement in the workspace within the reality of the work field (1). Designing a fast and effective procedure for moving between mobile robots in the presence of errors or problems is an important task in the field of robotics (2). Given the initial and final settings of the moving robot, the navigation algorithm should be able to determine if there is continuous movement from one design to another, and find such movement if any (3).

Review on Navigation Methods

The essential task of the navigation is to reach the final pose successfully without error. A mobile robot must follow the predefined routes as accurately as possible at a given rate (4). Fault avoidance is the platform for any oriented and autonomous robot (5). The design of the robot usually lies in the integration and coordination of sensors and multi-purpose actuators. In most cases, the robot gains information about a specific one via the different sensors installed on it. Usually, the use of multiple sensors or a camera can be detected the errors before they occur (6).

Conclusion

The problems of mobile robot navigation are complex. It aims to reach the robot to the final pose successfully without errors following a closely or predetermined trajectory. In this paper, a review of mobile robot navigation has been presented.

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