

Obstacles avoidance mobile robot system in uncertain and ever-changing surroundings

ABSTRACT

Robotic navigation has remained an open issue through the last two decades. Mobile robot is required to navigate safely to goal location in presence of obstacles. Recently the use of mobile robot in unknown dynamic environment has significantly increased. The aim of this paper is to offer a comprehensive review over different approaches to mobile robots in dynamic environments, particularly on how they solve many issues that face the researchers recently. This paper also explains the advantages and drawbacks of each reviewed paper. The authors decide to categorize these articles based on the entire content of each paper into ten common challenges which have been discussed in this paper, including: traveling distance, traveling time, safety, motion control, smooth path, future prediction, stabilization, competence, precision, and low computation cost. Finally, some open areas and challenging topics are offered according to the articles mentioned.

Keyword: Dynamic environment; Navigation; Obstacle avoidance; Path planning; Robotics