Best Path Planning Algorithm for Mobile Robot Based on Modified Genetic Algorithm

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ABSTRACT

In this paper a best path planning for mobile robot based on modified Genetic algorithm is introduced. The proposed algorithm read the map of the environment which expressed by grid model and then attempts to create an optimal or near optimal collision free path. No mutation operator is used in the proposed algorithm and modified generations of population size with modified selection operator are used. The proposed approach is implemented in five different environments. Four of these environments are implemented in different range of space. The fifth environment is very large size. The simulation results show that the proposed method can give good results in terms of minimizing distance and executions time in comparison with the other Genetic algorithms and with other kinds of soft computing (Neural Networks and Fuzzy) when they applying with different environments and cutter environments.

Keywords: Modified Genetic Algorithm, Path Planning, Modified Selection Operation.