DOI: https://doi.org/10.53555/nneee.v2i1.235 Publication URL:https://nnpub.org/index.php/EEE/article/view/235

Design of Adaptive Fuzzy Tracking Controller for Robot Navigation Using Particle Swarm Optimization

Pallavi P. Lingawar, K. K. Jajulwar
[1,2]Dept of Communication Engineering, G .H. Raisoni College of Engineering &Technology, Nagpur, India

How To Cite This Article:
Lingawar, P. P. ., & Jajulwar, K. K. . (2015). Design of Adaptive Fuzzy Tracking Controller for Robot Navigation Using Particle Swarm Optimization. ***Journal of Advance Research in Electrical & Electronics Engineering (ISSN 2208-2395)*****, *2*(1), 08-14. https://doi.org/10.53555/nneee.v2i1.235**

Abstract

This paper proposes a methodology for mobile robot navigation using the concept of Fuzzy Tracking Controller. The objective is to Design adaptive fuzzy controller for x-direction and y-direction movement. Mostly it is used in Robot Localization, Obstacle avoidance, Mapping, Recognizing people and objects &Learn how to interact (e.g. grasp) with objects in Robot Navigation. It determines the safe path for the robot to transverse to its target location, while avoiding obstacles along the way. In this System it calculate the reference path and using Particle Swarm Optimization technique it will reduce Time required to reach the target. Fuzzy tracking controller will be used to direct the system to the destination which will help system to overcome the obstacles in the path and reach the accurate destination.

Keyword: PSO(Particle Swarm Optimization), fuzzy logic controller, Navigation