عنوان مقاله:

Sampling-based motion planning algorithms with the aim to improve the preprocessing Speed of the RRT* algorithm

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خلاصه مقاله:

In this paper, have been proposed an algorithm based on sampling in order to motion planning multi-robot systems with IPSRRT* name that the aim of it is the RRT* algorithm preprocessing accelerating. The used Strategies in the in IPSRRT* algorithm: 1. the forming and development of two independent random trees of two end point and start point. 2. The sampling based success rate of start and end point. 3. the sampling of middle zone of two start and target zone according to success probability predicting in the future steps and weights assigning to environment different areas for increasing and decreasing of randomly point probability of each zone (all environment points with different probability percent have chance to participate in a random sample choice.)Finally, the proposed algorithm tested in Webots simulator and it's results compared with TGRRT* ،RRT and RRT* algorithms. The tests results showed that proposed algorithm not only increases the preprocessing speed but also provide shorter route than providing other algorithms.

کلمات کلیدی:

Path Planning, tree data structures, sampling method

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