Abstract

Target tracking is one of the applications of Mobile Sensor Networks. Mobility management is the important parameter that affects the performance and lifetime of the Mobile sensor networks. So we need to manage the mobility in a controlled manner. Existing methods attempt to achieve these requirements for controlled mobility single target tracking only. In this paper, we propose a Multi-Target Tracking method using Ant Colony Optimization to satisfy these requirements. In this proposed method, targets current position values are estimated at every time step. Then, predicting the next position value of each target by using the previous time-step estimated values. Interval Analysis is used for estimation and prediction of position values. Then the proposed method consists of moving the mobile node in an optimal way to cover Multi-Target. The optimal path is been chosen by Ant Colony Optimization technique. Simulations results shows the advantages of the proposed method compared to single target tracking methods.

References

- G. Song, Y. Zhou, F. Ding, and A. Song, "A Mobile Sensor Network System for
Ant-Colony-based Algorithm for Multi-Target Tracking in Mobile Sensor Networks


- Zhibin Xue, Jianchao Zeng, Caili Feng, and Zhen Liu, “Swarm Target Tracking Collective Behavior Control with Formation Coverage Search Agents & Globally Asymptotically
Stable Analysis of Stochastic Swarm; Journal of Computers, vol. 6, no. 8, August 2011.


Index Terms

Computer Science

Wireless Networks

Keywords

Ant colony  Controlled Mobility  Interval Analysis  Mobile Sensor Network
Multi-Target Tracking