

基于蚁群优化的无线传感器网络数据融合算法

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摘 要: 提出了一种基于蚁群优化的无线传感器网络数据融合算法, 利用蚁群算法在寻找最短路径方面的优势, 构造一棵最短路径树, 同时考虑无线传感器网络节点能量消耗、网络能量均衡以及数据传输延迟等问题. 用 C++ 对无线传感器网络模型和算法进行仿真, 实验证明

该算法能有效地减少网络中的数据传输量, 提高数据融合效率, 延长网络生存时间.

关键词: 无线传感器网络; 数据融合; 蚁群优化; 网络生命期

Ant Colony Optimized Wireless Sensor Networks

Data Aggregation Algorithm

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Abstract: The paper proposed a wireless sensor network data aggregation method based on the improved ant colony algorithm: making use of the advantages of ant colony algorithm in searching for the shortest path, the paper construct the shortest path tree. At the same time, the energy consumption, network energy balance and data transmission delay should be considered. Simulate the network model and algorithm with C++. Experimental results show that the algorithm can effectively reduce the amount of data transmission network, improve the efficiency of data integration and extend the network lifetime.

Key words: wireless sensor network; data aggregation; ant colony algorithm; network lifetime

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