World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:10, No:01, 2016

A Memetic Algorithm Approach to Clustering in Mobile Wireless Sensor Networks

Authors : Masood Ahmad, Ataul Aziz Ikram, Ishtiaq Wahid

Abstract : Wireless sensor network (WSN) is the interconnection of mobile wireless nodes with limited energy and memory. These networks can be deployed formany critical applications like military operations, rescue management, fire detection and so on. In flat routing structure, every node plays an equal role of sensor and router. The topology may change very frequently due to the mobile nature of nodes in WSNs. The topology maintenance may produce more overhead messages. To avoid topology maintenance overhead messages, an optimized cluster based mobile wireless sensor network using memetic algorithm is proposed in this paper. The nodes in this network are first divided into clusters. The cluster leaders then transmit data to that base station. The network is validated through extensive simulation study. The results show that the proposed technique has superior results compared to existing techniques.

Keywords : WSN, routing, cluster based, meme, memetic algorithm
Conference Title : ICCSSE 2016 : International Conference on Computer Science and Software Engineering
Conference Location : London, United Kingdom
Conference Dates : January 18-19, 2016