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An Energy Efficient Cluster Based Multipath Routing In Wireless Sensor Networks

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ABSTRACT

MANET is a decentralized network using a dynamic topology of wireless links and without the need for any cellular infrastructure. MANETs can be created using different networks like Vehicular Ad hoc Network (VANET) or Body Area Network (BAN). These networks need to cater a variety of challenges in deployment, connectivity, security, scalability and coverage. Since MANETs infrastructure is not static, the nodes move freely. The performances of the proposed technique show that it can work even on complex networks. Since, the proposed method is based on mutual information share between neighbors, it increases the segmentation robustness and drives the architecture towards a more rational topological/semantic map. The proposed algorithm can be applied to existing networks for upgrades or while creating a new networks and is its architecture is scalable, energy efficient and robust and live for longer periods.

Keywords: Cluster, Energy, Multipath, WSN, Routing, MANET, Protocol

1. Introduction

Computers in daily life have increased the new demand for connectivity. Wired solutions have existed for a long time, but the demand for wireless solutions for connecting to the Internet, reading and sending e-mails, changing meeting information, and so on is growing. In Latin, ad hoc means "for this" and also means "only for this purpose" (Al-Omari and PutralSumari, "Ad hoc mobile network overview of existing protocols and applications") and why A good description of the idea requires self-organizing networks. They can be installed anywhere without the need for external infrastructure (such as cables or base stations). They are usually mobile, which is why the term MANET is often used when talking about self-organizing mobile networks.

The increase in availability and universality of different types of access networks is driving the evolution to a "network of networks", which consists of self-organizing mobile networks but interconnected core and access network technologies. The network allows users to "connect better" anytime, anywhere without having to think too much about the back-end technology used to maintain and protect the connection. The proliferation of MANET wireless technology and the need for powerful and efficient communication systems require ubiquitous integrated wireless infrastructure.

Therefore, the motivation of this paper is to consider the problem of transmission power allocation in MANET with multiple cells, and to select the correct cell. The technique formulated on the non-linear score optimization problem can be transformed into two sub-domains of the power allocation and MANET unit selection problem. Therefore, the design of the best cell selection scheme is particularly important because it can significantly improve the quality of service (QoS) and network performance. As the architecture and algorithms in the MANET network become very complex, it seems that new models and methods must be paid attention to, as well as mechanisms that allow the network to perform adaptive behaviors. This is the main motivation for this research work.

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Improved Extreme Learning Machine (IELM) based Hunger Games Search for Automatic IP configuration and duplicate node detection

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Abstract:

IP address auto reconfiguration, which ensures the optimum routing, is one of the most challenging challenges in mobile ad hoc networks (MANET). IP address reconfiguration protocols are divided into two categories: stateful and stateless. Addresses must be unique, and conflicts between addresses must be avoided. This paper offers the HGS-IELM framework for IP address auto reconfiguration in MANET, which is based on the Hunger Games Search (HGS) algorithm and the Improved Extreme Learning Machine (IELM). The HGS-IELM voting enforces ensuring a fresh read depending on each access. Both data consistency and message overhead are engineered to work together. The suggested HGS-IELM approach is scalable and does not need the use of a central server. According to the results of the experiments, the proposed HGS-IELM framework achieved decreased message overhead and latency. The suggested HGS-IELM approach exhibited enhanced address availability while maintaining appropriate redundancy.