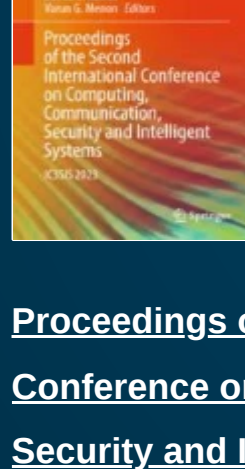


Clustered-Based Approach for Energy Efficient Routing in Wireless Sensor Networks

Conference paper | First Online: 28 March 2024

pp 175–186 Cite this conference paper



Proceedings of the Second International Conference on Computing, Communication, Security and Intelligent Systems

(IC3E 2018)

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Abstract

A vast variety of tiny and low-value detector nodes form up Wireless Sensor Networks (WSNs) that runs by non-reversible and non-rechargeable batteries and equipped with a variety of sensing devices. Cluster-based approaches guide in reducing the power consumption in WSNs and increase the life span. Sensor nodes in WSNs are often dispersed across a sensor field, which is an area or region where the sensor nodes are available or distributed. The processing power, memory, and battery life of these nodes are all constrained. Each of those distributed nodes has the power to accumulate and route information back to the stationary or mobile base stations, and the nodes in these networks work to allow to present high-quality information. The main goal of this study is to improve the LEACH (Low Energy adaptive bunch Hierarchy) method ranked routing ought to be examined for 2 reasons. One, device networks area unit dense, requiring a high level of redundancy in communication. Second, to extend the device network's scalability whereas maintaining communication security. to enhance the potency of the LEACH protocol, this endeavor simulates the LEACH routing protocol in MATLAB then implements the I-LEACH routing protocol to make sure that the chosen cluster heads area unit equally distributed over the network. The results were then evaluated for usefulness in wireless sensor networks based on energy consumption, average lifetime, and average throughput. It also outperforms LEACH, in terms of network throughput.

Keywords

- Clustering
- LEACH
- LEACH
- Network lifetime
- Throughput
- WSNs

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Enireddy, V. *et al.* (2024). Clustered-Based Approach for Energy Efficient Routing in Wireless Sensor Networks. In: Mumtaz, S., Rawat, D.B., Menon, V.G. (eds) Proceedings of the Second International Conference on Computing, Communication, Security and Intelligent Systems. IC3E 2018. Algorithms for Intelligent Systems. Springer, Singapore. https://doi.org/10.1007/978-981-99-8398-8_12

Download citation

- [RIS](#)
- [ENW](#)
- [BIB](#)
- DOI https://doi.org/10.1007/978-981-99-8398-8_12
- Published 28 March 2024
- Publisher Name Springer, Singapore
- Print ISBN 978-981-99-8575-3
- Online ISBN 978-981-99-8398-8
- eBook Packages [Intelligent Technologies and Robotics](#) [Intelligent Technologies and Robotics \(RO\)](#)

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