Abstract

Recent technological advances in sensors, low-power microelectronics and miniaturization, and wireless networking enabled the design and proliferation of Mobile Adhoc Networks capable of autonomously monitoring and controlling environments. One of the most promising problems existing is efficient data transmission with less resource utilization between cluster head and base station. This paper handles the most influencing factor to obtain such efficiency is energy consumption, density and distance. This proposed work implements two stages in the Clustering phase the sensor nodes are clustered using the intuitionistic fuzzy K-means clustering using the membership and non-membership value of each factor taken into the account. Once clustering phase is over then the cluster head is selected based on the highest fitness function obtained using the genetic algorithm here the node with highest energy consumption and lower distance from base station and neighboring nodes are considered as optimal cluster head. The data packets are aggregated and transferred using the cluster head to the base station. During each round the cluster in reframed using intuitionistic fuzzy k-means. The result shows that the proposed method well performed in the case of uncertainty in cluster
head selection.

References

17. Ching-Wen Huang, Kuo-Ping Lin, Ming-Chang Wu, Kuo-Chen Hung, Gia-Shie Liu,
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Keywords

MANET, cluster, Intuitionistic fuzzy K-means, uncertainty, energy consumption, distance