Permutation based K-Means Clustering Approach for Energy Conservation in MANETs

Abstract

One of the important issue in MANETs is an energy saving and security. Each node in MANETs has limited energy resource, so that the lifetime of the network is one of the major critical issues. This paper studied SVM data aggregation method for classifying nodes according to their threshold values, this method eliminated the data redundancy and outliers but classification method is not much enough to reserve energy by power degradation on nodes in MANET. The sources of energy conservation are transmission cost, encryption/decryption, reducing data redundancy and transmission time in MANETs. Here P-coding can offered security based on symmetric key encryption, but symmetric key algorithms are not sufficient to provide security in MANETs. This paper introduce new scheme of energy saving called “Permutation based K-means Clustering” (PKMC) proposed for MANETs, which improves overheads, packet drops, transparency, security and energy efficiency. By the use of Permutation and K-means clustering, multiple clusters can be form with similar objects and each object provides security to data during data transmission. Thus, Permutation based K-means clustering contains minimum energy conservation as compares to previous data
aggregation and encryption/decryption methods.

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Index Terms
Keywords

MANETs, Permutation Encryption, SVM, K-means Clustering, Energy saving.