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

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Authors:
Ankita Chouhan, Sunil Phulre, Vineet Richhariya

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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.

References

3. Ajay Kushwaha, Hariram Sharma, “Enhancing Selective Encryption Algorithm for Secured MANET”, 2012 Fourth International Conference on Computational Intelligence, Modelling and Simulation
4. Emiliano De Cristofaro and Claudio Soriente, “Participatory Privacy:Enabling Privacy in Participatory Sensing”, IEEE TRANSACTIONS ON NETWORKING VOL.27 NO.1 YEAR 2013
5. QUANSHENG GUAN, F. RICHARD YU, SHENMING JIANG, VICTOR C. M. LEUNG, HAMID MEHRVAR, “TOPOLOGY CONTROL IN MOBILE AD HOC NETWORKS WITH COOPERATIVE COMMUNICATIONS”, IEEE Wireless Communications April 2012
10. GU Hong , ZHAO Guangzhou , QIU Jun, “One-Class Support Vector Machine with Relative Comparisons”, TSINGHUA SCIENCE AND TECHNOLOGY ISSN1007-0214/l08/16llpp190-197 Volume 15, Number 2, April 2010
15. Book: Data Mining, Southeast Asia Edition: Concepts and Techniques By Jiawei Han, Micheline Kamber, Jian Pei
16. Book : Data Clustering: Theory, Algorithms, and Applications By Guojun Gan, Chaoqun Ma, Jianhong Wu

Index Terms
Keywords

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