

Abstract Details

Title: Modified Ladder Diffusion in WSN

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Abstract: A wireless sensor network is composed of hundreds or thousands of tiny resource-constrained sensors, equipped with non rechargeable batteries. For such sensors, transmission is much more energy consuming than computation. The innovative concept is to aggregate multiple sensing data by performing diverse operations like algebraic or statistical operations such as addition, median, minimum, maximum, and mean of a data set, etc., which is sensed by sensor nodes. The existing work proposes ladder diffusion (LD) algorithm to map out the data relay routes in wireless sensor nodes. The objective of the algorithm is to balance the data communication overhead, increasing the lifetime of sensor nodes and their transmission efficiency. The existing Ladder diffusion algorithm is modified by using the concept of cache memory. The cache memory is used to select the appropriate path using the most used path. The ladder diffusion works normally for the first time. But for the other times, for same source and destination the cached path is followed instead of the ladder diffusion path. This research proposes ladder diffusion algorithm and compare the performance of the proposed algorithm with the existing algorithm i.e. direct diffusion over the different scenario having 3, 30, 50, 150 nodes respectively. The comparison is done by using the packet delivery ratio and the end 2 end delay. There is no impact of increase in number of nodes on the e2edelay in existing or proposed protocol. The PDR of the proposed protocol is enhanced a lot as compared to the existing algorithm. The PDR of the proposed algorithm is better in each scenario as compared to the existing algorithm. The better PDR show the better performance of the proposed protocol as compared to the existing algorithm.

Keywords: Wireless Sensor Network, Aggregation, Ladder Diffusion.