Abstract

Wireless Sensor Networks consist of thousands of power constrained micro sensors whose main task is to sense and report the target phenomena to the base station. Hierarchical routing plays an important role for transmitting the aggregated data to the sink. Sensor nodes are organized into number of clusters and within each cluster, cluster head is responsible for collecting the data and to report that data to the Base Station. Machine learning algorithms play an important role while selecting the cluster head based on various QoS parameters. In this paper, a hierarchical protocol LEACH is chosen for analyzing the impact of machine learning algorithms – K-Means and modified K-Means clustering on energy consumption of nodes by varying the type of input parameters. This paper covers the brief introduction of 802.15.4 based Wireless Sensor Networks, power models, machine learning algorithms for sensor clustering and simulation environment using NetSim.

Index Terms

Computer Science  Wireless
Keywords