

Machine learning based energy efficient techniques in wireless sensor networks

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Abstract: Wireless Sensor Networks (WSNs) in contemporary times has become an all important appendage of the industrial innovations for consumer applications though its application was initially military specific for surveillance purpose. With its usage in almost every new smart innovation from weather surveillance to Health monitoring, WSN has taken the world by storm and has become an attraction for the research scholars across the globe. With limited sources of energy and capacity of a battery, efficiency is a prime issue in WSN. The energy resources can affect the entire sensing capability of a network as the WSN nodes are resource-constrained. Classifying a data automatically has become a sensitive task in many of the applications owing to huge amount of sensed data. With an aim to overcome the limited capacity of contemporary power supplies, several machine learning techniques including supervised, unsupervised and reinforcement learning techniques are adapted and can be utilized in data fusion, clustering, event detection, sensor selection etc. which ultimately can be used for the enhancement of data quality, improving energy consumption and for the maximization of WSN lifetime. The paper shall present a state-of-art review of existing techniques of data fusion based on machine learning, which have found proportional significance in the research community. It shall discuss majority of the significant studies, in-depth discussion of their outcomes along with a discussion of research gaps.

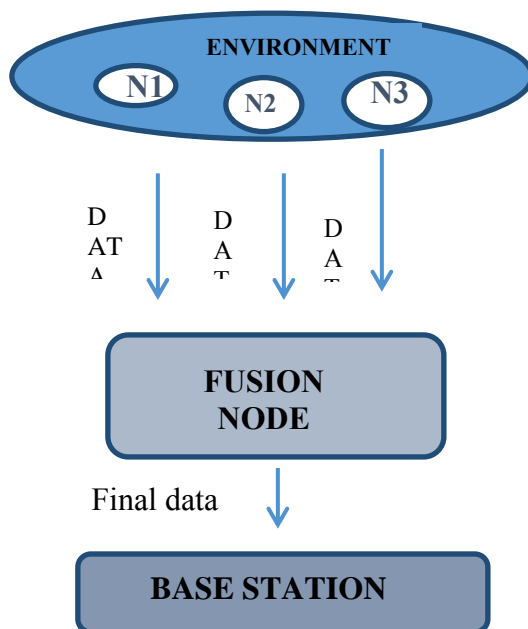


Figure 1: Data fusion technique.

Biography: Aurmella Roohie Bodha received her BCA, Bachelor in Computer Application, from University of Kashmir, India. She received her PG degree, MCA, from Islamic University of Science and Technology. Presently she is doing Ph. D. from PG department of Computer Science, University of Kashmir, Srinagar, India.