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A real and accurate energy efficient localization model in WSN using machine learning technique

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Abstract

The wireless sensor network is the key deciding element in communication, the 4G and 5G LTE communication models are offering many applications such as data accessing, and data rate controlling, multimedia and live streaming applications. Therefore, an advanced wireless sensor network designing and its development is compulsory to provide the above applications. The wireless sensor networks are dynamic in nature, so that they can change their behavior with little time. Due to time-variant action, internal and external factors cannot be predictable. WSN facing power constrains issue, node failure, and homogeneity node accessing and node scalability problems. Moreover WSN network challenging following key parameters such as the high bandwidth, high energy consumption, QOS, cross layer communication and physical channel. The lifespan of the sensor network, Maximum usage of resources and system are the main limitations of the earlier method. The existed architecture and optimization models cannot solve the above limitations and significant problems. In this research work addressing the machine learning-based WSN node localization technique, the node localization is a complex problem due to more number of elements to be estimated between sensor nodes. In this paper, node localization, objective function, mean-average error in localization, anchor node density and estimated position parameters are analyzed with various methodologies. At final proposed an advanced localization technique with machine learning model for future generations.

Keywords:

WSN, node localization, sensor nodes, machine learning.

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