Machine learning wireless sensor network: A Review

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ABSTRACT

Due to its size, affordability and ease of deployment, the wireless sensor network (WSNs) is one of the most promising technologies for various real-time applications. The WSN may change dynamically as a result of certain internal or external variables, necessitating a depreciating dispensable redesign of the network. Since the old WSNs systems are explicitly planned, it is difficult for the networks to react quickly. Machine learning (ML) approaches may be used to respond appropriately in such situations. Without human involvement or reprogramming, ML is the process of learning by itself through experiences and actions. A notion of machine learning techniques is proposed in this paper. This study provides a solution to the design problems in WSNs. As shown in this article, several initiatives have resulted in the resolution of a number of wireless sensor network architecture difficulties using a variety of machine learning techniques. When using machine learning-based algorithms in WSNs, it is important to take into account a number of limitations, such as the minimum resources required by the network application that really needs to monitor certain events, as well as other operational and non-operational factors.

Keywords: Machine learning, sensor, network, WSN architecture

1. Introduction

Pulses, velocity, light, temperatures, and other input opportunities are all part of the tangible world of today. That is necessary to collect information from a variety of perspectives in order to have a more thorough grasp of said surroundings. It's simple for use WSNs architecture that makes gathering this sort of copious data possible. In to keep track of the surroundings and actively transfer their data to a central node or may be base station, the WSNs feature geographically scattered autonomous sensors. Modern WSNs are bi-directional, allowing control of sensors operations from the base station (BS) to the sensor as well as transfer of data that can be traced from nodes to a central node or BS [1]. Military uses, such as battle field surveillance, were primarily responsible for the development of WSNs; today, these networks are used.

Figure 1: Many nodes are connected in ML (Sources: Google)