Effect of Deep Learning and Blockchain Technology in Mobile Ad-hoc Networks and Wireless Sensor Networks

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ABSTRACT

In this paper focuses centrally on two sorts of ad-hoc networking namely MANETs and another WSNs. The portable capability of MANETs has specially delighted in an unexpected expansion. A massive need for dynamic ad-hoc basis networking continues to be created by advancements in hardware design, high-speed growth in the wireless network communications infrastructure, and increased user requirements for node mobility and regional delivery processes. Wireless sensor network (WSN) experiments have made it possible to link the sensors to an individual such as objects, animals or people, in order to keep a physical mobile in its wireless network setting under surveillance. In whatever way, the sensor nodes are fitted with limited battery power, it is important to incorporate energy-efficient wireless network routing strategies to maximize the sensor life as much as possible. There are several challenging issues in mobile ad-hoc networks, such as machine learning method cannot analyze features like node mobility, channel variation, channel interference because of the absence of deep neural layers. Due to decentralized nature of mobile ad hoc networks, its necessitate to concentrate over some extremely serious issues like stability and scalability, routing based problems such as network congestion, optimal path selection, etc. and security. The biggest concern with design of WSNs is the battery energy of sensor node as it is constrained and consumed within such a shorter amount of time. It is a need of an hour to provide an efficient wireless network routing scheme(s) that differentiate malicious nodes in time-varying and dynamic wireless sensor network environments. Existing routing strategies find it difficult to know such abnormal nodes due to the radical change in routing information between two routing nodes is hard to differentiate appropriately. Considering the problem of these two areas such as MANETs and WSNs, aim and objective of the research can be defined as follows.
I. Management of node mobility can be improved using training with neural learning mechanism.
II. Chennel interference in a MANET (Wireless channel quality prediction) can be minimized using Deepchannel.
III. Stability and Scalability in mobile ad-hoc network can be improved using clustering algorithms.
IV. To minimize routing based problem such as network congestion, optimal path selection, etc. in mobile ad-hoc networks with the help deep neural networks.
V. To maximize the lifetime of wireless sensor networks using solar energy collection techniques.

VI. To improve communication network routing security and efficiency in WSN using block-chain and reinforcement learning mechanism

VII. To secure intrusion detection system for mobile ad-hoc networks using support vector machine and feed forward neural network-based intrusion detection system-IDS