

Blockchain-Based Approach on Security Enhancement of Distributed System in Healthcare Sector

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Abstract : A variety of data files are now available on the internet due to the advancement of technology across the globe today. As more and more data are being uploaded on the internet, people are becoming more concerned that their private data, particularly medical health records, are being compromised and sold to others for money. Hence, the accessibility and confidentiality of patients' medical records have to be protected through electronic means. Blockchain technology is introduced to offer patients security against adversaries or unauthorised parties. In the blockchain network, only authorised personnel or organisations that have been validated as nodes may share information and data. For any change within the network, including adding a new block or modifying existing information about the block, a majority of two-thirds of the vote is required to confirm its legitimacy. Additionally, a consortium permission blockchain will connect all the entities within the same community. Consequently, all medical data in the network can be safely shared with all authorised entities. Also, synchronization can be performed within the cloud since the data is real-time. This paper discusses an efficient method for storing and sharing electronic health records (EHRs). It also examines the framework of roles within the blockchain and proposes a new approach to maintain EHRs with keyword indexes to search for patients' medical records while ensuring data privacy.

Keywords : healthcare sectors, distributed system, blockchain, electronic health records (EHR)

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