

CONSENSUS ALGORITHMS IN BLOCKCHAIN: A COMPARATIVE STUDY

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ABSTRACT

Blockchain is a distributed ledger that has garnered widespread interest in a variety of fields. Many sectors have begun to use blockchain technology in their products and services. To comprehend blockchain's effect and applicability to different applications, it is necessary to grasp its main components, functional features, and architecture. Bitcoin, a cryptocurrency, is the most well-known use of blockchain. Because a blockchain network is a distributed ledger, it requires a consensus mechanism among peer nodes to guarantee that it functions properly. In the literature, a variety of consensus algorithms have been suggested, each with its unique set of performance and security features. Every application's needs cannot be met by a single consensus method. It is critical to evaluate the various consensus algorithms on a technical level in order to identify their strengths, limitations, and applications. We have discussed metrics that are relevant to blockchain consensus performance and security. In terms of these factors, the consensus methods are evaluated and contrasted. A research need is identified in terms of developing an efficient consensus method and assessing current techniques. This review paper will serve as a reference for developers and academics who are evaluating and designing a consensus method.

KEYWORDS: *Bitcoin, Block chain, Consensus, Distributed ledger, Security.*

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