

Comparison of Blockchain Ecosystem for Identity Management

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Abstract : In recent years, blockchain technology has been found to be the most significant discovery in this digital era, after the discovery of the Internet and Cloud Computing. Blockchain is a simple, distributed public ledger that contains all the user's transaction details in a block. The global copy of the block is then shared among all its peer-peer network users after validation by the Blockchain miners. Once a block is validated and accepted, it cannot be altered by any users making it a trust-free transaction. It also resolves the problem of double-spending by using traditional cryptographic methods. Since the advent of bitcoin, blockchain has been the backbone for all its transactions. But in recent years, it has found its roots and uses in many fields like Smart Contracts, Smart City management, healthcare, etc. Identity management against digital identity theft has become a major concern among financial and other organizations. To solve this digital identity theft, blockchain technology can be employed with existing identity management systems, which maintain a distributed public ledger containing details of an individual's identity containing information such as Digital birth certificates, Citizenship number, Bank details, voter details, driving license in the form of blocks verified on the blockchain becomes time-stamped, unforgeable and publicly visible for any legitimate users. The main challenge in using blockchain technology to prevent digital identity theft is ensuring the pseudo-anonymity and privacy of the users. This survey paper will exert to study the blockchain concepts, consensus protocols, and various blockchain-based Digital Identity Management systems with their research scope. This paper also discusses the role of Blockchain in COVID-19 pandemic management by self-sovereign identity and supply chain management.

Keywords : blockchain, consensus protocols, bitcoin, identity theft, digital identity management, pandemic, COVID-19, self-sovereign identity

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