VOLBY: IDENTIFYING VOTER SUPPRESION THROUGH SECURE, VERIFIABE, AND UNBIASED E-VOTING PROTOCOL USING BLOCKCHAIN.

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Abstract

Modern democracies are built on the foundation of elections, and a voting system is the core component for the citizens to exercise their rights. Countries all over the world use some form of voting methods to achieve democracy. Even though elections are vital to the democratic process, their integrity is constantly challenged around the world. Voter fraud and voter suppression are main two concerns when an election is held and its often not fully preventable, but it can be reduced to a greater extent. Voter suppression is termed as discouraging or preventing a citizen to vote for the election. There are several blockchain based e-voting protocols, but all the existing protocols only focus on the voter fraud aspect that is ensuring a voter is anonymous or a vote is casted anonymously and verified but there are no e-voting protocols that have considered the voter suppression aspect. This research will be the first to highlight voter suppression and build a protocol that will ensure that voter suppression can be identified. It is identified that centralized registration process has often paved the path for voter suppression. The proposed protocol will ensure that the voter registration process is decentralized and using blockchain it will ensure storing the voter suppression related data and thus the data cannot be tampered. The proposed solution offers to provide a transparent, verifiable, trustable, and unbiased e-voting protocol using blockchain which will enhance the election integrity.

KEYWORDS:

Blockchain, voter-suppression, Hyperledger fabric, authentication, E-voting, Distributed Ledger Technologies