

I-Voting System

Prof. Harish Chandra Maurya¹, Harsh Kushwaha², Akhil Malap³, Shubham Shinde⁴, Ashish Kharat⁵

Assistant Professor, Department of Computer Engineering¹

Student, Department of Computer Engineering^{2,3,4,5}

Chhatrapati Shivaji Maharaj Institute of Technology, Panvel, Maharashtra, India

Abstract: Online voting is a trend that is gaining momentum in modern society. It has great potential to decrease organizational costs and increase voter turnout. It eliminates the need to print ballot papers or open polling stations—voters can vote from wherever there is an Internet connection. Despite these benefits, online voting solutions are viewed with a great deal of caution because they introduce new threats. A single vulnerability can lead to large-scale manipulations of votes. Electronic voting systems must be legitimate, accurate, safe, and convenient when used for elections. Nonetheless, adoption may be limited by potential problems associated with electronic voting systems. Blockchain technology came into the ground to overcome these issues and offers decentralized nodes for electronic voting and is used to produce electronic voting systems mainly because of their end-to-end verification advantages. This technology is a beautiful replacement for traditional electronic voting solutions with distributed, non-repudiation, and security protection characteristics. The following article gives an overview of electronic voting systems based on blockchain technology. The main goal of this analysis was to examine the current status of blockchain-based voting research and online voting systems and any related difficulties to predict future developments. This study provides a conceptual description of the intended blockchain-based electronic voting application and an introduction to the fundamental structure and characteristics of the blockchain in connection to electronic voting. As a consequence of this study, it was discovered that blockchain systems may help solve some of the issues that now plague election systems. On the other hand, the most often mentioned issues in blockchain applications are privacy protection and transaction speed. For a sustainable blockchain-based electronic voting system, the security of remote participation must be viable, and for scalability, transaction speed must be addressed. Due to these concerns, it was determined that the existing frameworks need to be improved to be utilized in voting systems.

Keywords: Blockchain-based electronic voting, Coding, Security, privacy

REFERENCES

- [1]. Prof. Anisaara Nadaph, Rakhi Bondre, Ashmita Katiyar, Durgesh Goswami, Tushar Naidu “An Implementation of Secure Online Voting System”
- [2]. Kashif Mehboob Khan, Junaid Arshad, Muhammad Mubashir Khan, NED University of Engineering and Technology, Pakistan “Secure Digital Voting System based on Blockchain Technology”
- [3]. Liu, Y.; Wang, Q. An E-voting Protocol Based on Blockchain. IACR Cryptol. Eprint Arch. 2017, 2017, 1043.
- [4]. Shahzad, B.; Crowcroft, J. Trustworthy Electronic Voting Using Adjusted Blockchain Technology. IEEE Access 2019, 7, 24477–24488.
- [5]. Racsko, P. Blockchain and Democracy. Soc. Econ. 2019, 41, 353–369.
- [6]. Yaga, D.; Mell, P.; Roby, N.; Scarfone, K. Blockchain technology overview. arXiv 2019, arXiv:1906.11078.
- [7]. The Economist. EIU Democracy Index. 2017. Available online: <https://infographics.economist.com/2018/DemocracyIndex/> (accessed on 18 January 2020).