

Smart Voting System Using Face Detection, OTP Verification And Blockchain

Shruti Jangalgi, Komal Jagtap, Maseera Baig, Krishna NalleProf.Ravindra Aapare

Information Technology BE Student, Trinity College Of Engineering and Research, Pune, India

ABSTRACT

This paper suggests using blockchain technology to address transparency, security, and trust issues in traditional voting systems. The proposed framework covers voter and candidate registration, voting processes, biometric authentication, and utilizes smart contracts and decentralized storage. A strong consensus mechanism ensures result integrity. The transparent ledger, real-time monitoring, and post-election transparency build trust, aiming to revolutionize voting systems and enhance public confidence in democracy.

Keywords

E-polling, voting system, blockchain application, blockchain voting, E-voting, electoral system, blockchain, cryptographic hash, secure voting.

I.INTRODUCTION

In modern democracies, people need to trust that their votes are counted fairly and that the election process is transparent. But traditional voting methods have problems like being vulnerable to hacking, lacking

transparency, and being open to manipulation.

There's concept involving "blockchain" technology, which is highly secure and transparent. Think of it as an unchangeable digital ledger that ensures vote accuracy. This approach addresses various election aspects, such as verifying voter eligibility, using smart contracts for vote counting, and bolstering security with facial recognition and one-time passwords. Another idea is an Android app for convenient and secure mobile voting.

The main goal of these new ideas is to make voting safer and more efficient, so people can trust the process and have faith in their elections.

A new electronic voting machine uses facial recognition and fingerprint sensors for enhanced security. It combines facial and fingerprint authentication to reduce tampering risks. User-friendly interface, data storage on a private server for security. Goal: Secure and efficient voting.

This paper introduces an online voting system with face detection, recognition, and one-time password authentication to improve voting security and participation. The document highlights the significance of grades in gaining admission to respected universities. It also outlines the steps for publishing a research paper: rigorous evaluation, quality research, and relevance to the field.

II. PROBLEM STATEMENT

The current in-person voting process is burdensome and problematic for ordinary people, requiring them to go to election centers to cast their votes.

III. LITERATURE SURVEY

The system's average waiting time was influenced by queue length and response times, with longer queues slowing down voting. Overall response time depended on the server's database and network capacity.[1].

A new online voting system, presented as an Android application, aims to address the shortcomings of the current voting system. This system empowers voters to remotely cast their votes from any location in the country using an Android device and an internet connection. The system is equipped with a database for storing voter information and a server for verification and tallying of votes. Overall, primary goal of this proposed system is to enhance the efficiency and security of voting process.[2].

A new electronic voting machine with facial recognition and fingerprint sensors improves voting security and efficiency. It combines facial and fingerprint authentication to prevent tampering. Facial recognition uses advanced algorithms, while fingerprint verification enhances

image quality. A user-friendly interface is in place, and data is stored securely on a private server to avoid manipulation, ultimately enhancing the security and efficiency of the voting process.[3].

The paper presents an online voting system with face detection, recognition, and one-time password authentication to enhance security and participation, enabling remote voting for more engagement. Two-factor authentication ensures both security and voter anonymity. It also explores electronic voting as an alternative to paper-based methods. [4].

Facial recognition enhances security in remote electronic voting by adding an extra layer of authentication. Challenges include privacy concerns, algorithm biases, and dispute resolution. Questions arise about technology reliability, compatibility with voting protocols, and safeguarding voter privacy.[5].

The document talks about creating an electronic voting system in Iraq using a special kind of technology called a "private blockchain." This system is designed to make voting more transparent, accurate, and fair. It will also make sure that only eligible people can vote, keep votes secret, and make sure they can't be changed.

IV. PROPOSED SYSTEM

Implementing a blockchain-based voting system has promise but also faces challenges. Technical barriers exist as people need to learn how to use blockchain, requiring training for voters and officials.

In our system Block Chain Concepts are applied to Online Voting System when we are developing a Smart E-voting system by taking advantage of block Chain concepts with web interface using face

recognition.

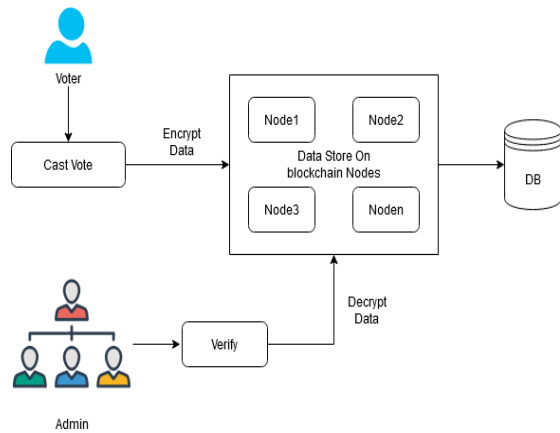


Figure 1. System Architecture

V. FUTURE SCOPE

The system has a wide future scope, applicable in various industries, organizations, schools, etc., for precise and efficient results in both small and large-scale elections.

VI. CONCLUSION

The blockchain-based voting framework has great potential to address security and transparency issues in elections. While recognizing its limitations, the advantages of unchangeable records, real-time monitoring, and post-election transparency can revolutionize the electoral process. Collaboration, continuous enhancements, and public awareness are essential for fully realizing secure and transparent elections with blockchain technology.

VII. ACKNOWLEDGEMENT

I want to express my sincere gratitude to Dr. Vilas Gaikwad and Dr. Ravindra Aapare for their invaluable guidance, mentorship, and unwavering support during this research project. Their expertise and dedication have been instrumental in shaping this work, and I am fortunate to have had the privilege of working under their mentorship. Their contributions have been vital to our success.

REFERENCES

1. Syeda Sumbul Hossain, Samen Anjum Arani, Md. Tanvir Rahman, Dr. Touhid Bhuiyan, Delwar Alam, "E-voting system using Blockchain technology", IEEE 2019.
2. Muhammad Shoaib Farooq, Misbah Khan, Adnan Abid, "A framework to make charity collection transparent and auditable using blockchain technology", IEEE 2020.
3. Tassos Dimitriou, "Efficient, Coercion-free and Universally Verifiable Blockchain-based Voting", IEEE 2019.
4. Kashif Mehboob Khan, Junaid Arshad, Muhammad Mubashir Khan, "Secure Digital Voting System Based on Blockchain Technology", IEEE 2018.
5. Michał Pawlaka, Aneta Poniszewska-Maranda, Natalia Kryvinskab, "Towards the intelligent agents for blockchain e-voting system", IEEE 2018.
6. Patrick McCorry, Siamak F. Shahandashti, and Feng Hao, "A Smart Contract for Boardroom Voting with Maximum Voter Privacy", IEEE 2017.