ONLINE VOTING SYSTEM WITH FACE DETECTION

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Abstract

Elections are one of the ways in which individuals are elected to public office in democracies. There is a paper ballot especially a ballot paper during elections. Each in the voting chart on the ballot The voter submits a ballot paper that is not distributed and is basically a piece of paper with that name printed on it and. The symbols of the candidates. An electronic voting machine is basically a memory recorder a. Record the votes cast by the voters. In this paper, the main benefits of e-voting system for the country Published, along with accreditation through OTP is also one of the main advantages, is that it is being implemented block chain & ether tool In this project. In this study, e-voting system with face recognition Deep learning techniques has been proposed. The voting process is handled through a block chain Mechanical and Blind Handheld Use.

Keywords: elections, public office, democracy, electoral voting system, memory recorder, Face recognition, blind hand writing system

1.INTRODUCTION

As per the records of TOI 24 Jan, 2009 11 lakhs fake votes were observed in Delhi. Then according to India News June 2013 : 30000 illegal voters were found in election commission under Sheila Dikshit constituency. Another news which was alleged by LJP(LokJanshakti Party) Chief,Ram Vilas Paswan saying that Bihar election were having 30% fake voter- cards. Election involves both public or private vote which depends on the position. Local, state, and federal governments are some of the most important positions. In paper based on election, Voters cast their votes by simply depositing their ballots in sealed boxes distributed across the electoral circuits around a given country. After ending of election period the boxes which contains of ballot control unit are opened and votes are counted manually in presence of the certified officials appointed by election commission. So it is a time consuming process and also requires a lot of resources to conduct voting process. In this paper we have proposed online voting system to cast the vote using face recognition and OTP. The information about the OTP and Face is passed to the server unit for the further verification. Then the server checks for the data from the database and compares that data which is already existing in If the data matches with the already stored information, the person is allowed to poll the vote. If not, a message is displayed on the screen and therefore the person is not allowed to poll the vote. For voting representatives are appointed by electorates. In current scenario voter needs to show his/her voter ID card to cast the vote on the booth. So this process is time consuming as the voter ID card needs to be get verified by the officials. Thus to speed up the voting process and avoid such type of problems, we have proposed the new system.

II LITERATURE SURVEY

Decentralized E-Voting Portal Using Block chain

This paper represents frameworks of block chain for the E-voting system. This implementation can be used for small scale elections such as board rooms or inside corporate houses elections. Smart contract from Ether eum is used for this implementation. The idea behind this implementation is to combine the technology of block chain with the homomorphism encryption and secret sharing schemes for the decentralized voting applications safe from

trusted third party. It gives the public and transparency voting process which protects the anonymity of voter's identity and the privacy of data transmission and verification of ballots during billing phase

Advantages:

- It increases transparency of the voting and protects the uncertainty of identity of vote
- Protection to the data privacy, transmission and ballots verification during the phase of billing is provided

Disadvantages: Internet- and block chain-based voting systems can have security risks.
Limitations: User should have knowledge about application.

Electronic Voting Machine with Enhanced Security

This paper describes the construction and design of voting machine using ATMEGA 32 microcontroller which has security of three extra layers. EVM takes a lot of time for the process of voting using ballot papers. So considering to the amount of time, manpower to be saved for extremely fast and reliable. So here implementation of the system is in such a way that voting secrecy is maintained without using ballot
paper. VVPAT is currently used for voting machine which is expensive than EVM. EVM gives 100% proof of tamper, where results are just a click away. But this EVMs can be tampered easily by changing the hardware connections. So this paper proposes a three layered extra security

Advantages:
Speed of counting of ballots is increased using this application.

- Saves the cost of paying staff as there is no need to count votes manually.

Disadvantages: Security risk present.
Limitations: Issue of Compatibility can occur

Biometrically Secured Electronic Voting Machine

In this paper, Arduino and Finger print scanner is used to implement the system which identifies each voter, also count votes and avoids fake votes. In this system voter is identified using FPS which detects if a person is a registered or not and also it denies for the voter to cast the second vote.
Advantages: Biometric description of voter is used.
Disadvantages:
Advanced security system can be required for significance of investments and costs to implement.
Limitations: Application should be known to users.

Multipurpose platform independent online voting system

in this system the voter just needs to have a Aadhar card number and a smart phone which can scan the barcode implemented on the system. The user can vote on any location as it is totally online based application. This system creates its own voting ballot. The encryption of vote data is at the user's end and decryption is at the local administrator end. This makes the system more authenticated and secure
for voting

III EXISTING SYSTEM

The existing solution which includes a GSM module, SMS module, GPS, fingerprint sensor and an image scanner. This makes the system more secure and efficient than the current existing EVM. We use biometrics technology to identify the valid voter from the database which has the voter's details with his fingerprints. With the help of the GSM module and SMS unit, the message is notified to a valid citizen's portable device that he has effectively made the choice. So he can check effectively with no disarray. The given system also involves the Global Positioning System, which provides the Geographical location of the given system is located. The GPS module provided with the system helps in tracking the device in the case of stealing the device from the polling booth.

Considering that the cloud is coupled with the system, the system can act as an online system. In this proposed system the flaws of EVM are overcome. This system is much better protected and works with higher efficiency

than the system that is already present. This system includes a database that has a list of the voters who have cast their votes. This list is provided in order to determine the voters one's who wasted their valuable chance to decide the rightful candidate representative and the corresponding steps or measures can be taken regarding these default voters

Since current voting systems don't suffice to security needs of modern generation, there is a need to build a system that leverages security, convenience, and trust involved in voting process. Hence voting systems make use of Block chain technology to add an extra layer of security and encourage people to vote from anytime, anywhere without any hassle and makes voting process more cost- effective and time-saving This system will surely ensure a more secure and safer method of voting for elections in universities. Our future plans are to amplify the research of fingerprint voting system to multi-biometric voting system in which we will integrate facial recognition; retina scan and iris scan technology. This paper described, an electronic Voting system for small to medium sized Internet-based public opinion systems that provides privacy of vote, voter's authentication, audit ability, security, double-voting prevention, fairness voting device from manipulating the authenticated voters voting choices

IV PROBLEM STATEMENT

Even though our Country has taken steps towards Digitalization of India, considering the progress of Voting System it still has some flaws. Registration of Votes is being possible only if people go to polling booths for the current system. During the time of voting, voter's name is listed in the list of his/her respective area. They cannot vote outside

The vicinity of the address mentioned in the voting card. So people who are migrated to other places cannot cast the vote physically. The recent pandemic situation of Corona Virus shows us the risk of this system. This can lead to failure of social distancing during voting process, as the voter needs to be physically present for casting the vote

V PROPOSED SYSTEM

E-voting system helps the user to cast the vote without visiting the polling booth. We have two voting types I-Voting and SMS-Voting where as I-Voting (Internet Voting) is done remotely via internet. SMS-Voting is done by sending SMS to the Election Department.

In the first step the registration process is done by the voters through an application. Then in the second step the application will start its process. Here we use already existed database or centralized database, which contains voter's information with linked mobile number. Server sends the OTP (One-Time Password) to the voter's registered mobile number. Then voter enters that OTP, then database again verifies that entered OTP by voter and if it is correct that means he/she is a valid user. Face recognition will have done here if the data matches with database it will go to next step. After the Face recognition candidate's list will appears. This list contains the candidate name and in front of that name the button named 'Vote' is provided. Voter should have to press that button then only the voting is done and the voting procedure is completed.

VI IMPLEMENTATION

These include:

Easier access to debuggers through a new break point () built-in
Simple class creation using data Classes

Customized access to module attributes

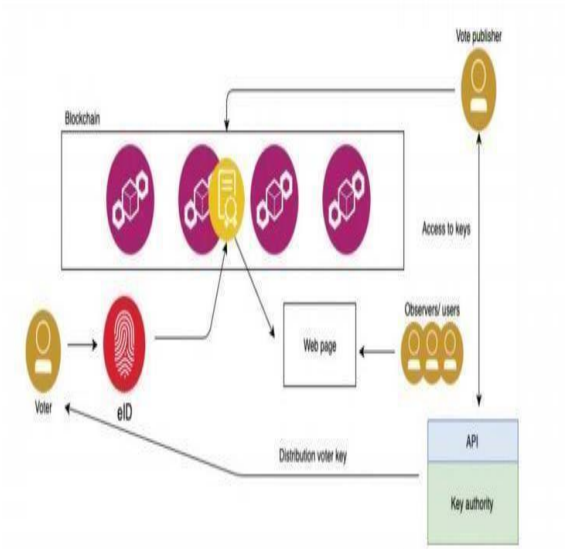
- Improved support for type hinting
- Higher precision timing functions
- More importantly, python 3.7 is fast and it is officially when compared to other latest versions of python. the main object of our project facial recognition technology which is used in our project. As block chain is used in earlier days also but here, we have added facial recognition using python 3.7 we are doing the paper.

Here we can access with the data which is present already or we can add new data in to data base. It is secure, more helpful to the people who are living in another countries, no need to stand in the queues Citizens can cast their vote from the place where they are.

Facial recognition is a way of recognizing a human face through technology. A facial recognition system uses biometrics to map facial features from a photograph or video. It compares the information with a database of known faces to find a match. Facial
recognition can help verify a person's identity, but it also raises privacy issues.

In the real world, though, accuracy rates are usually lower. According to the CSI story, the Facial Recognition Vendor Test found that the error rate for one algorithm rose from 0.1% when faces were matched against high-quality mug shots to 9.3% when matched to pictures of individuals captured in public.
You might be good at recognizing faces. You probably find it a cinch to identify the face of a family member, friend, or acquaintance. You're familiar with their facial features — their eyes, nose, mouth — and how they come together. That's how a facial recognition system works, but on a grand, algorithmic scale. Where you see a face, recognition technology sees data. That data can be stored and accessed.

VII SYSTEM ARCHITECTURE



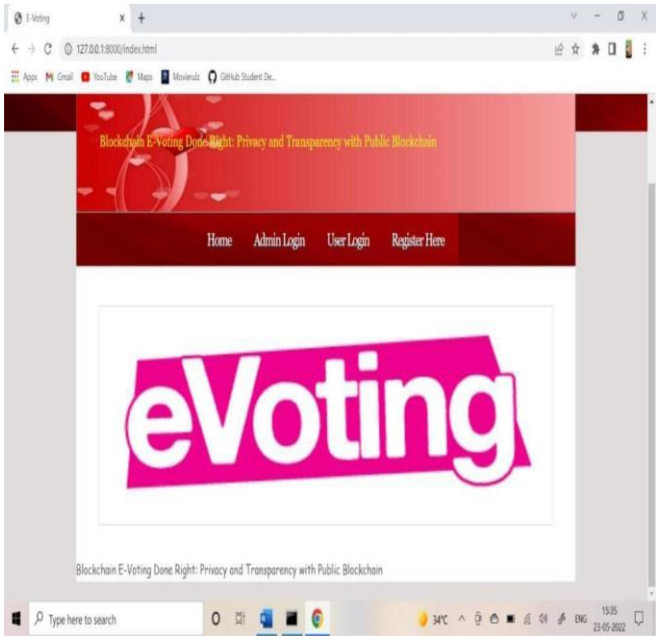
- **Admin:** this user is responsible for adding new party and candidate information, seeing party information and voting numbers. Admin system login by using 'Admin' username and 'Admin' password.

User Module: This user must register with the website by using the name of their user as their ID and then upload a face photo via a camera. You can go to the log-in after registering which validated user ID and go to the cast vote module that runs following functionality after successful registration.

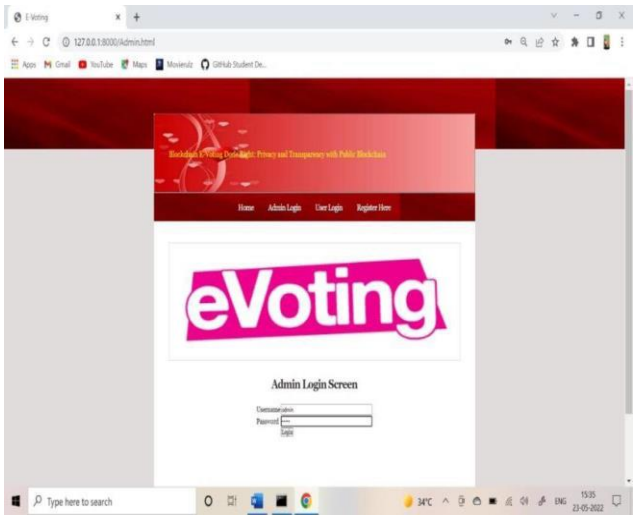
First user is connected and the picture captured in his PC webcam

With the OpenCV application, faces are detected and CNN application predicts the user identity, then the application displays all voting candidacies if user identification matches CNN predicted face. If you don't vote, you can vote to your wishes by clicking on the link next to the name of your party. When applying for votes, the voter and the candidate details will be collected and then the data will be crypted and stored in Blockchain. Below is the code of Blockchain's storage

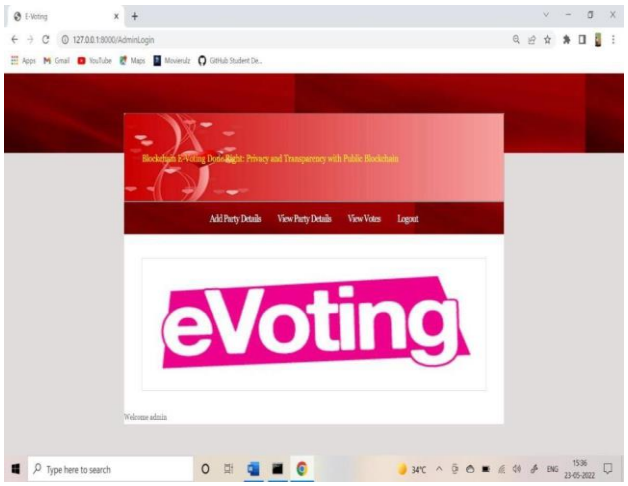
VIII RESULTS



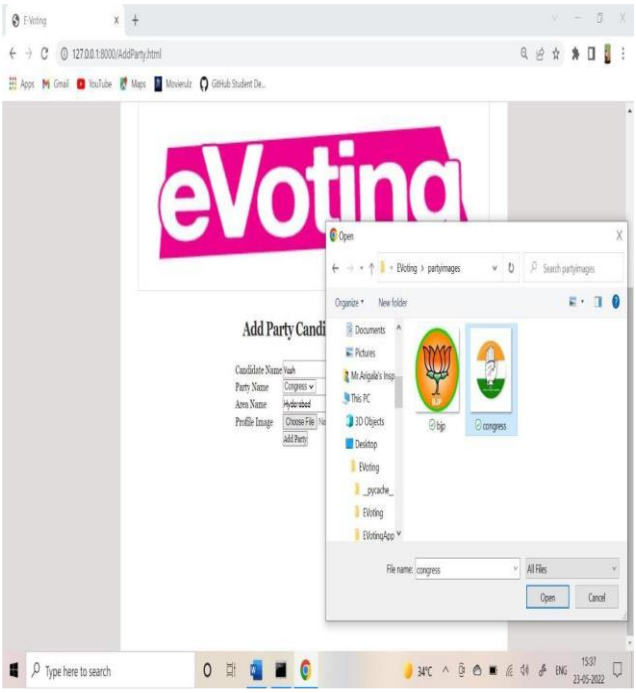
Website Page of E-Voting

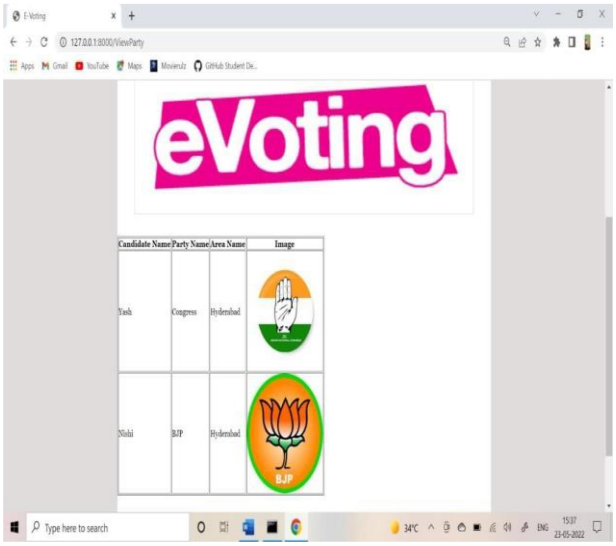


Admin Login Screen

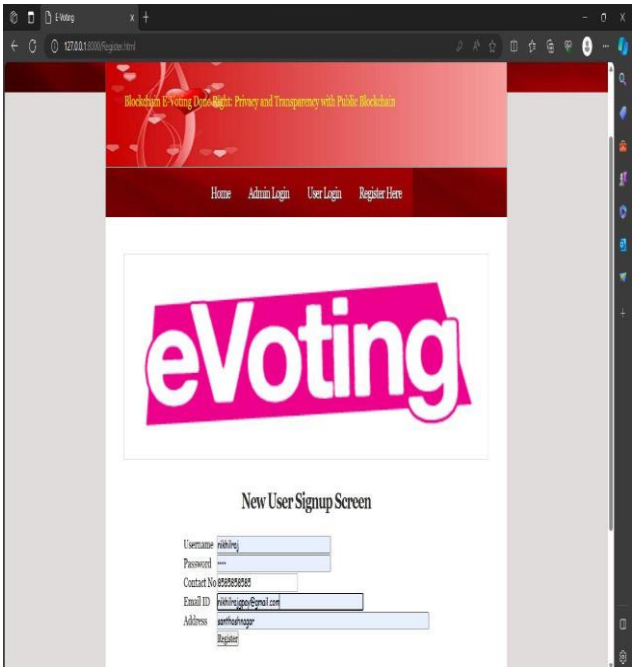


welcome admin

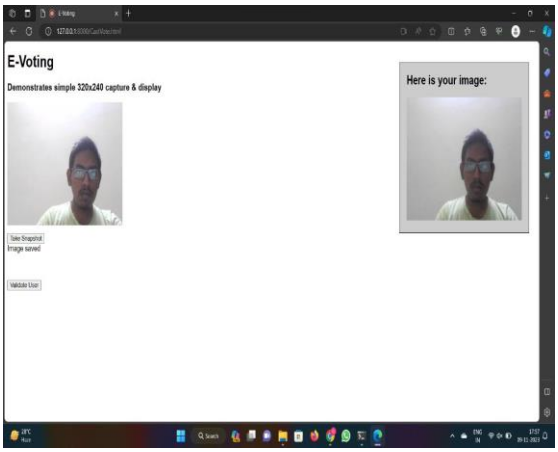




View Party Details



New User Signup Screen



Capturing image

IX CONCLUSION

Many issues with electronic voting can be solved using block chain technology, which makes electronic voting more cost-effective, pleasant, and safe than any other network. Over time, research has highlighted specific problems, such as the need for further work on block chain-based electronic voting and that block chain-based electronic voting schemes have significant technical challenges

REFRENCES

[1] Balamurali, Potru Sarada Sravanthi, B. Rupa.” Smart and Secure Voting Machine usingBiometrics”,2020 Proceedings of the Fourth International Conference on Inventive Systems and Control (ICISC), September 2020.

[2]K.C Arun1, Shahbaz Ahmad2, Saba Noor3, Iqra Mumtaz4and Mubashir Ali5.” Based Secure Electronic Voting System with IoT and PubNub for Universities”.4th Global Conference on Computing & Media Technology,July 2020.

[3] Mr. Santosh Kuma, Dr.NitikaSinghi, Abhijit Patankar.” A Survey on Smart Electronic Voting System through Block-Chain Technology”,2020 Journal of Emerging technologies and Innovative Research(JETIR), April 2020.

[4] MD Shadab Hussain, Dr Mohammad Sarfraz, Salim Rukhsar. "Epileptic Seizure Detection Using Temporal Based Measures in EEG Signal", 2018 3rd International Conference on Communication and Electronics Systems (ICCES), 2018.

[5] Nir Kshetri and Jeffrey Voas.” Block Chain-Enabled E-Voting.”2018 The Institute of Electrical and Electronics Engineers (IEEE),2018.

[6] MichałPawlaka, AnetaPoniszewska-Maranda ´ a, Natalia Kryvinskab,c.” Towards the intelligent agents for block chain e-voting system.” 2018 The 9th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN),2018.

[7] M. Pawlak, J. Guziur and A. Poniszewska-Maranda,”Voting process with blockchain technology: Auditable Blockchain Voting System”,FatosXhafa, Leonard Barolli, MichaÅGreguÅ (Eds.): Advances in Intelligent Networking and Collaborative Systems, LNDECT 23, ISBN978-3-319- 98556-5, Chapter 21, Publisher: Springer-Verlag Heidelberg, 2018.

[8]S. Mello-Stark and E. A. Lamagna,”The Need for Audit-Capable E-Voting Systems”, Proc. of 31st International Conference on Advanced Information Networking and Applications Workshops (WAINA), Taipei, Taiwan, 2017.

[9] X. Xu, I. Weber, M. Staples, L. Zhu, J. Bosch, L. Bass, C. Pautasso and P. Rimba, "A Taxonomy of Blockchain-Based Systems for Architecture Design", Proc. of IEEE International Conference on Software Architecture (ICSA), Gothenburg, Sweden, 2017.

[10] Deepika, S.Kalaiselvi ,Mahalakshmi, S.AgnesShifani "Smart Electronic Voting System Based On Biometric Identification-Survey". Third International Conference on Science Technology Engineering & Management (ICONSTEM), 2017

[11] V. Kiruthika Priya, V. Mahadevi, B. Pandimeenal, T. Dhivya, "Arduino based Smart Electronic Voting Machine", International Conference on Trends in Electronics and Informatics, ICEI 2017,

[12] Dr. Z.A. Usmani , Kaif Patanwala, Mukesh Panigrahi, Ajay Nair, "MULTI PURPOSE PLATFORM INDEPENDENT ON LINE VOTING SYSTEM", International conference on innovation in Information, Embedded and Communication Systems, 2017

[13] S. M. Anggriane, S. M. Nasution and F. Azmi," Advanced e-voting system using Paillier homomorphic encryption algorithm", Proc. Of International Conference on Informatics and Computing (ICIC), Mataram, Indonesia, 2016.

[14] Poniszewska-Maranda, L. Gebel," Retrieval and processing of information with the use of multi- agent system", Journal of Applied Com-puter Science, Vol. 24, No 2, ISSN 1507-0360, pp. 17-37, 2016

[15] Julia Pomares, Ines Levin, R. Michael Alvarez, Guillermo Lopez Mirau, Teresa Ovejero, "From Piloting to Roll-out: Voting Experience and Trust in the First Full e-election in Argentina"‖, International Conference on Electronic Voting EVOTE,2014.

[16]Alex Delis, Konstantin Gavatha, AggelosKiayias, Charalampos Koulpasis, Elias Nikolakopoulos, LamprosPaschos,Mema Rousopoulou, Georgios Sotirellis,Panos Stathopoulos, Pavlos Vasilopoulos, Thomas Zacharias, Bingsheng Zhang, "Pressing the button for European elections", International Conference on Electronic Voting EVOTE2014, E-Voting.CC GmbH, 2014

[17]Chunlin Yang, Techshino, "Fingerprint Biometrics for ID Document Verification", IEEE 9th Conference on Industrial Electronics and Applications (ICIEA), pp.1441-1445, 2014

[18] D. Ashok Kumar, T. UmmalSariba Begum, "Electronic Voting Machine – A Review", Proceedings of the International Conference on Pattern Recognition, Informatics and Medical Engineering, March 2123, 2012.