I Vote : Cloud Based Online Voting System With Identity Verification Using Face Detection

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Abstract- *This paper is concerned with cloud-based voting system which basically provides platform for online voting which can be used in the pandemic situations. In democratic country voting is considered as privilege. India's initiative to Voter Card Unique Identification Number for every citizen will help to implement this online voting system using cloud computing. The main target of our project is finding candidate who are all not voting and avoid the travelling time for voters to vote for electing candidate. In traditional voting system the voter must come to polling booth for doing their democracy duty. Main objective of proposed system is to minimize the time consumption for voters. It supports only the authenticate person to elect the candidate by using face recognition technique. User can vote at any place at time during the election time. System is designed to be more user friendly. Also, for different wards different rooms can be selected. So, this system can be said as a effective way of handling elections in pandemics.*

Keywords- Authentication, Cloud, Cloud Computing, Democratic, Facial Recognition.

I. INTRODUCTION

Cloud computing is a new technology that provides the computing platform for sharing resources that includes infrastructures. It is a focus on sharing data. These nodes include end user, computers, data centers and cloud services. Cloud computing provides the computer technology via the Internet. Withrapid growth in development of processing and storing technologies and the success of the Internet and storing data have come cheaper, more important, and more nowhere available than ever ahead. This technological trend has enabled the consummation of a new computing model called cloud computing. cloud offer services that can be grouped into three orders software as a service (SaaS), platform as a service (PaaS), and structure as a service (IaaS). In SaaS technology there is no need of installation of software all this can be done on platform like cloud servers. In PaaS technology in this it basically offers all the tools that are needed to build an application. Voting is the important procedure in different countries worldwide and India is largest democratic country. This proposed system is focused on Voting solution during Covid pandemic using cloud computing technique. User friendly voting machine this is a voting system by which any voter can use his/her voting rights from anywhere in the country and main objective of the system is to make it user friendly. The system will be well developed for people to vote and save considerable time and cost. prevent unlawful voting the proposed system will have preventive measures such as face recognition and Aadhar verification to avoid fake voting and double voting. User face recognition and Aadhar card verification. This proposed system will allow the voters to login with Aadhaar credentials, which is then matched with an existing cloud database. after that user will have a face recognition after both process if user is verified then user can cast vote on portal. Quick result system after the election ends, the result can be generated which is automatically tabulated electronically in real-time. The outcome can be published and shared with the voters on E Vote website. Classification based on wards. The proposed system will have classification based on wards where user should be able to go to ward which is allotted by government to cast a vote.

As in Indian traditional voting system there are polling booths so for voting, polling booths should be visited to cast the vote. Visiting polling booths also going through verification process is time consuming process. So overcome this there are some existing systems like Opavote, Doodle poll, e-Ballot, election buddy. They have some flaws such as having less secure database which can be leading to data loss and result manipulation also bogus voting should be prevented. In existing system, you can double vote using another email or other credentials which are required there also voting using fake credentials can happen all these flaws are present there which can be resolved which will enable a secure and fat voting system. Also, there are certain features which are absent also they are very important from security and verification perspective. So facial recognition and pan card verification can be used to improve verification process. Also, by using cloud technology can give fast and secured results also various models can be deployed to enhance the electronic voting system.

II. LITERATURE SURVEY

It is a literature study of the research papers and research which gives the detailed information about some of the existing systems along with its advantages and disadvantages. Ramya Govindaraj, Kumaresan P, K.Sree Harshith, [1] have proposed an online voting system with use of C programming language and SQL for back end and they have used Microsoft Azure cloud. They have proposed a voting machine which will have a larger database. This system is designed to prevent double voting and it will have a verification process. This system will have basic features which are user registration, login, vote, results, overseer module, adding constituency, voter list, candidate list and also ticket wise classification is good feature in use in this system. Gururaj K S, K Thippeswamy [2] have designed a secure cloud-based framework for Online Voting System and analyzed its performance based on the three cryptographic algorithms namely Blowfish, AES and RSA. for analysis they have considered two major parameters like speed and security. Kanchan Avhad, Kalyani Avhad, Gayatri Bhosale, Kamini Kamale [3] proposed system deals with the design and development of a web-based voting system using cloud computing and Aadhaar card to provide a high performance with high security voting system. This System allows the voters to authenticate using Aadhaar no which is then matched with an already saved within a database that is retrieved from Aadhaar card database of the government. The voting system is managed in a simpler way as all the users must login by Aadhaar card number and password. This paper [4] focuses on providing a solution on false voting. By using Aadhaar card identification it provides enough security which reduces the false votes. Also, for identification they are also considering biometric verification using machines. In this paper they have not discussed the security of the database and privacy of users. Indrajeet Sharma and Dr. Sanjay Kumar Dubey [5] have proposed a system which will have a physical verification and otp authentication. For OTP verification they have used OTP algorithm which is discussed in this paper. Shin-Yan Chiou, Tsung-Ju Wang, Jiun-Ming Chen [6] have discussed the problem regarding blank voting in the existing online voting system which causes the multivoting problem. Also, they have discussed about Blind signatures could be used to prevent leaking voting information from the server. J´an Magyar∗, Gergely Magyar and Peter Sinical [7] proposed This model was implemented as a multiclass neural network model in Microsoft Azure Machine Learning Studio. This system-based model showed the lowest precision in recognizing the emotions sadness, neutral, fear, and surprise. Fahad Alzola [8] proposed with the spread of democracy around the world, voting is considered a way to collectively make decisions. Recently, many government offices and private organizations use voting to make decisions when the opinions of multiple decision makers must be accounted for. Another advancement: cloud computing attracts many individuals and organizations due to low cost, scalability, and the ability to leverage big data. To overcome this, they proposed the Token Vote scheme. Token Vote is an electronic voting system in the cloud that uses revocable fingerprint bio tokens with a secret sharing scheme to provide privacy, nonrepudiation, and authentication Ms. Bhargavi Jadav, Ms. Aneri Desai, Mr. Fenil Patel, Mr. Ronak Patel, Ms. Julisha Patel, Ms. Bhumika Patel and Mr. Manish Vala [9], prosed they had used cloud computing for data storing and these data can be accessed easily from anywhere anytime. Achyut Shankar, PhD & P. Pandiaraja, PhD & K. Sumathi & Thompson Stephan, PhD & Pavika Sharma, PhD [10] have surveyed the voting system and explored the existing drawbacks of the voting system concerning security and malfunction. In the proposed system, a secure online e- 7 voting system is developed for end-to-end users to avoid misappropriation of the vote during the result publication in India or any other country.Syed Shahram Najam, Aamir Zaib sheikh, and Shabbar Naqvi [11] proposed A novel hybrid design based electronic voting system is proposed, implemented and analyzed. The proposed system uses two voter verification techniques to give better results in comparison to single identification-based systems.Ju-wang Chen [12] proposed Accessing and Utilization of data and information from remote locations is one of the major requirements of the present world. Due to the increase in the requirement of the data access from remote locations, challenges in the enhancement of technology-based systems also have increased proportionately.

III. METHODOLOGY

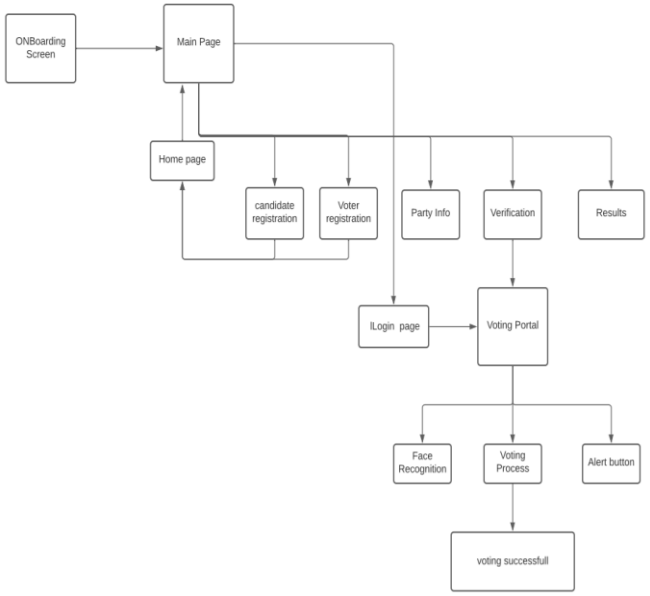

FIG. :-1: BLOCK DIAGRAM OF VOTING SYSTEM

In this system user must first create an account and login by providing valid credentials and if the credentials are invalid then user must retry the same process again & again till the user entered the correct or valid credentials. Initially, user needs to register in the system by providing information such as voter number, mobile number, city, age, password etc. This information is stored in voter dataset. The system takes input image from the user at the time of registration through webcam. This image is stored in face dataset for template matching. Then for casting the vote, user needs to login to the system by entering Voter id and Password. After this user have to create dataset of images then the user must click on vote now button which will then ask for face recognition after successful verification you will be directed to page where you have to give voter id then you will be directed to voting panel where you will cast vote to candidate according to the candidate which are present in your ward after successful voting you will be redirect to the home page. If you fail to recognize the face you will not be able to vote. In frot page there are two list voter list and candidate list in voter user can see all the verified voter which will be verified by admin those who are in that list are eligible for voting only. And in candidate list all the candidates will be listed there. And on front there is another tab results where users can see the results.

IV. RESULTS

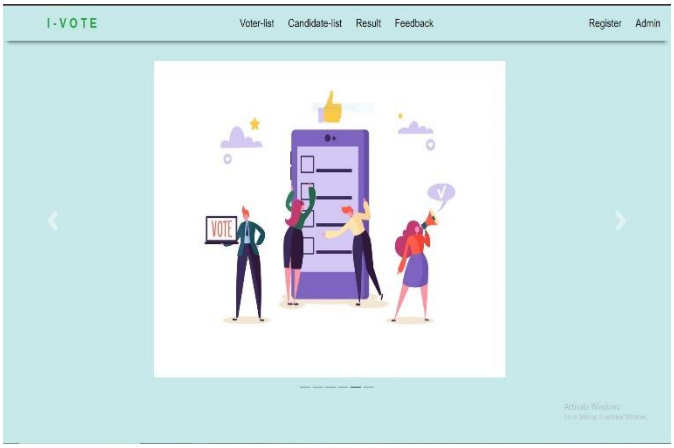

FIG. :-2: FRONT USER INTERFACE

In this figure 2 the front user interface is shown which will showed to user as he enters the website it basically has 6 options and a static page which will have some information about services provided and information about the website and now in those 6 tabs are voter list, candidate list, results, feedback, register, admin respectively.

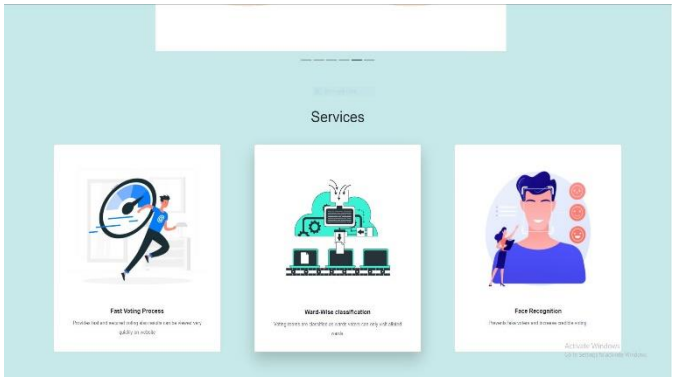

FIG. :-3: SERVICES

In this figure 3 services page is shown which basically shows the services offered by the website.

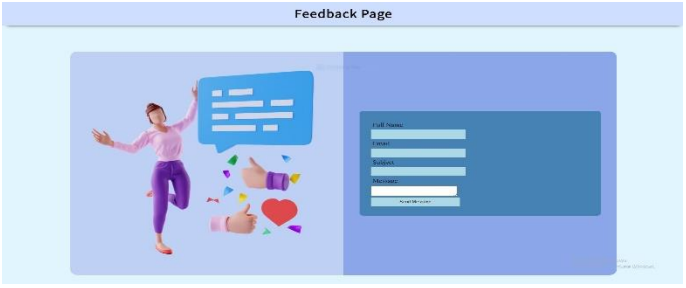

FIG. :-4: FEEDBACK FORM

In this figure 4 feedback form is shown which basically gets the feedback from the user and sends to the owner in the form email.

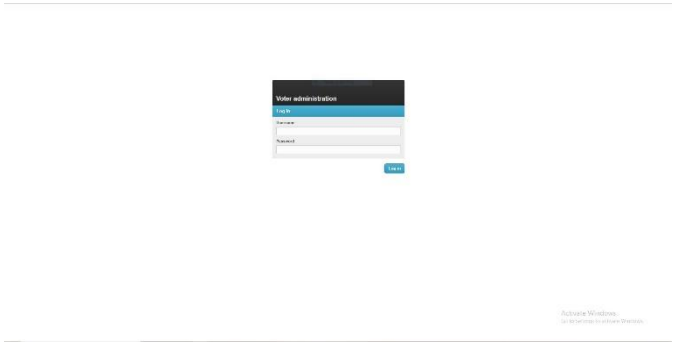

FIG. 5:- ADMIN USER INTERFACE

In this figure 6 it shows admin login interface which basically requires username and password with which admin can login.

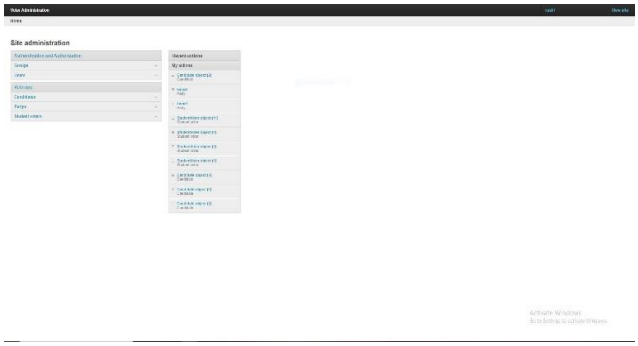

FIG. 6: ADMIN PANEL

In this figure 6 it shows admin panel which basically shows all the functionalities admin has he can add candidate , add party, add users with some functionalities which can perform certain tasks . Also, it shows recent action which things an user have just performed. Also, we can use power groups which afterwards can be assigned to the staff members according to role.

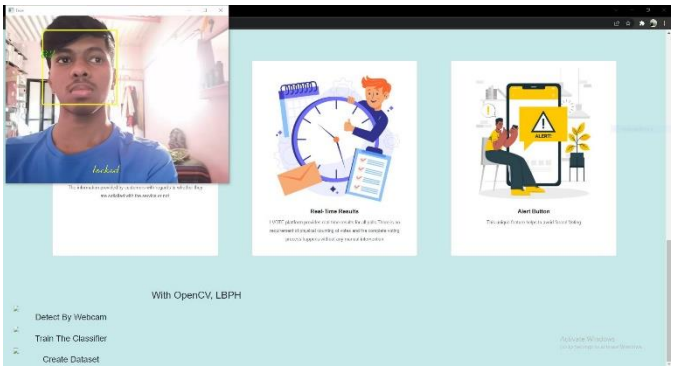

FIG. :-7: FACIAL RECOGNITION WINDOW

In this figure 7 it shows image of facial recognition window which will basically verify the user by face database which is basically stored in database and that photos are taken at the registration.

V. CONCLUSION

The proposed method is to develop a secure internet voting system based on face recognition which tried to overcome all the drawback occurs in traditional or current online voting system. The proposed system has many strong features like correctness, verifiability, convenience etc. For this system no requirement of election officer, paper ballot or any electronic voting machine only the internet connection and face scanners are required one can from anywhere securely. The proposed system provides three face authentications. First is Voter ID, second is Face Recognition and third is OTP verification. In this system no voter can vote twice because the voter facial patterns will be linked to their voter card. So that any user tries to vote twice with some other person's voter card it is not possible due to respective facial patterns stored in data storage will not be matched with the voter trying to voting with some other person's Voter ID. This proposed solution is cloud computing based with facial detection which allows the voter to register and he/she can vote from anywhere irrespective of the location. This provides security and also avoid casting of the multiple votes by same person. This system is reliable in which voter can vote from multiple locations. It also minimizes work, human requirements and time resources.

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