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# Review on Voting System Using Face and Fingerprint

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**ABSTRACT:** The evolution in the advanced technologies like mobile phones, different wireless and also web technologies given raise to the new applicability that will help to make the voting system easy and efficient. The E-voting promises the possibility of serviceable, easy and safe way to capture and count the votes in an election. This research project provides the specification and requirements for E-Voting using web-based platform. The e-voting means the voting procedure in election by using electronic device. This system provides extra security to voter, along with electoral voting card voter must scan his face and thumb for voting in government site.

**KEYWORDS:** Face and Finger-print, Voting

## I. INTRODUCTION

Voting is the method for electing a person who is being selected by the community member for a position at entire country. Voting process not just only in the election for selected the applicant who will be in the requirement position like a President. The process also will do for choosing the person that requires to vote who will in the position for handle the task for example for the choosing the leader in the class. As known, the voting process was using the ballots paper to assure the process system. It is difficult because the problem which the ballots need to compute by manually calculating. In manually calculating, the problem that can be happen when the person who calculated the ballots will miss counting or maybe the person more favoritism at one person candidates.

Now the growth in technology has progressed in such a way that Android Applications are extensively used. This paper is about an Android Application that facilitates Aadhar based voting system. The key features of this application involve reduction in costs of conducting elections and decrease in the number of fake votes. The fingerprint verification is the uniqueness of this application which allows the casting of vote only once by an individual. This application is particularly planned at the easiness in

the conducting of an election. At present for the election service a number of officers are to be assigned for different voting booths which increases the cost, with help of this application only a single officer is required. He will have a login in the system through which the fingerprint system will be efficient for the voters. As it is a centralized voting system, a state can manage the parliament election and the panchayath elections on the same day. The problems of casting a vote only in one's own constituency can be escaped through this system since a person can cast his vote from any constituency and the person once voted from any part cannot cast his vote again.

## II. PROBLEM STATEMENT

In traditional elections, a voter generally goes to the voting stations. After direct person-person verification with several IDs, the voter is allowed to vote. The voter is then given a ballot which permits a singular vote. Once the ballot is used, it cannot be used repeatedly. However, this ballot must also be anonymous. The ballot must determine the voter as being permitted to vote, but not reveal their actual identity, and the voter must also be given assurances of this. Traditional polling methods trust a lot of parties throughout the election. The current approach requires an attacker interact directly with the voting process to disrupt it. There is a higher chance of getting caught as there will be physical evidence in the traditional polling.

#### IV. LITERATURE SURVEY

The proper implementation of democratic rights has become linked to the availability and reliable functioning of advanced information and communication technology (ICT). While modern societies fully depend on ICT for business, work and leisure time activities, the use of ICT for democratic decision making is still in its infancy. In fact, the out date technological ideas for voting have been criticized in part for lost and uncounted votes and could therefore be responsible for biased political decisions making. Countries all over the world are inspect e-voting, for it has some striking advantages over traditional paper voting, including security for casting votes, accuracy of counting and analyzing votes, choices to conduct voting in a centralized and decentralized manner, etc. The reasons why the e-voting technology has not developed to equivalent levels as known for business and leisure time activities lies mostly in an inherent lack of trust and fear of electronic threats. While most countries are analyzing conceptualizing or testing e-voting systems, three cantons in Switzerland have pioneered the development of e-voting to its full technological maturity. The world is constantly in improvement and growth in technology, that's why we should go parallel with it, to be able as much as we can get benefit from these improvements

In [1], the author focuses on the Iris Detection of the voters. Voter's Iris is detected and once it matches, the system confirms the voter to be the eligible individual to vote by checking his/her Aadhar details. After the conformation of voter, the voter will be able to cast the vote. As the existing Aadhar database contains all the information about voter's Iris, fingerprints and other details like address, blood-group voter can be easily tracked and checked. This approach requires less manpower and highly secure. The author focuses on biometric data of the voters to recognize the authentic voters. Once the biometric image is read the information will be sent to the web application through the microcontroller's serial port. After matching the biometric image with the existing image in the database the server sends the message and displays it on the LCD confirming the owner's identity. If not confirmed, it displays the same as not eligible through LCD. [2]

E. Secure Reliable Multimodal Biometric Fingerprint and Face Recognition. The author focuses on the facial feature extraction using component-based face detector. Once all the features are extracted, they are compressed to a single feature vector and it is fed to the recognizer. The whole process is implemented using MATLAB. [5] The same is done with the fingerprint images. Every pixel of the fingerprint images is analyzed whereas for facial images the distance between the facial marks or features is analyzed. The analysis is called principal component analysis. This approach helps to build a better version of the existing system.

The issues behind e-casting a ballot should be inspected minimalistic ally before such conceivably hazardous moves are made. In a voting system, protection and security are wanted, yet are not in every case all the while reachable at a sensible expense. In e-voting systems, It is difficult to verify the person, accurate verification and anonymity is difficult to ensure. This report shows a portion of the numerous issues with viable e-casting a ballot and why public races are too critical to even consider trusting to it. When e-voting system schema is considered, there are different modules involved to consider the security and design. design, development and deployment are the three important phases considered to have secure system. In different words, it is crucial to have the establishment to design a secured and actual e-voting schema for producing a protected, proficient and freely adequate implementation of e-voting schema in the real time world.

Any extra check for the security or spam will reduced the security concerns that users have about the e-voting systems now a days. A program that can produce and grade tests that people can pass yet current PC programs can't which is known as CAPTCHAs. In our project this is utilized to affirm that users are attempting to cast a vote rather than the robotized PC frameworks. Following are the multiple applications that CAPTCHAs have for practical security purpose like prevention of comment spam in blogs, protection of web registrations, online polls where you want to assure that peoples are casting votes not the programs, preventing dictionary attacks, search engine bots, worms and spasm etc. For it some guidelines has published by official Captcha site [6].

- Accessibility: It ought to be effectively open for perusing the content. we also can use audio CAPTCHA that if an issue arises because of legitimate reasons.
- Image Security: Image's ought to be misshaped arbitrarily. Application will be available to the assaults without arbitrary contortion, application will be available to the assaults.
- Script Security: In the wake of utilizing this

- systems are shut to any PC assaults. Anyway, we likewise need to ensure that contents utilized are not effectively accessible so attacker will track down the simple route around them to utilize the systems.
- Security Even After Widespread Adoption: Some of the destinations may be utilizing the locales that have Captcha’s setup. It is significant that the security level kept something very similar, and these destinations are as yet secure even after countless sites embrace them [7].

### V. SYSTEM ARCHITECTURE

An election is a legal decision-making process by which a populace or society picks a person to hold a political office. Election have been the standard process by which contemporary representative’s majority rules system works that originates before to as ahead of schedule as the seventeenth Century. Elections are administrated by public entities such as the government and also private and business organizations, for example, representative picking for the Board of Directors of an organization, proficient club leaders and even, utilized in intentional affiliations.

There are two different types under which the classification of voting system is done, namely:

- Traditional or Paper – Ballot Voting Systems
- Electronic Voting Systems (EVM)

In traditional elections, a voter generally needs to visit the voting booth. After manual verification by using Government ID Proofs, it is allowed to voter for casting a vote. After that voter is Handover a ballot which only permits a single vote. It can't be used again if it is used for once. although, this ballot should be unidentified. The polling form should distinguish the elector as being allowed to cast a ballot, yet not uncover their genuine character, and the citizen should likewise be given affirmations of this. Traditional polling trusts a ton of gatherings during the process of election. The current strategies require an assailant collaborate straightforwardly with the democratic interaction to upset it. There is a more noteworthy possibility of getting captured as there will be actual proof in the traditional polling.

The recent systems which is available now is a machine and paper-based democratic framework which needs a lot of labor and requires large number of resources. The current democratic framework arises many problems during the counting likewise in light of the fact that it is checked physically. To defeat this as we said before the e-voting system gives a proficient method to finish the entire democratic framework. The e-voting framework is an android application which empowers client to cast a vote in his advanced mobile phone. This is further developed contrasted with the current framework since it needn't bother with any labor. Furthermore, citizen doesn't have to visit the surveying stall. The application additionally lessens the intricacy of tallying since it is programmed.

This system enable user to vote from home/offices without going in premises. User takes his selfie or captures his image and send to administrator via uploading image in Mobile app. Image is store in firebase server. This image is fetched in Python IDE. Face recognition process is carried out and processed image is compare with image from dataset. When face match, fingerprint is scan and compared.

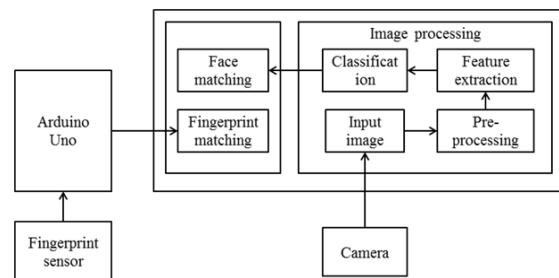


Fig 1. block diagram of proposed system

Input image is real time image captured by camera. Image is pre-processed to denoise it. Pre-processing is a familiar name for operations with images at the least level of abstraction. The aim of pre-processor is an advancement of the image details that suppresses undesirable distortions or enhances some image features important for further processing.





The common aim of quality eradication and representation techniques is to convert the segmented objects into representations that better describe their main features and attributes. The type and complication of the resulting representation depend on many factors, such as the type of image (e.g., binary, grayscale, or color) etc. image is comparing with image from dataset and then the image is classified. For classification we are using LSTM algorithm. After successful matching face and fingerprint, system allows user to start election. User will vote on government website and election results are stored on database. When election ends, authorized person clicks on end election and result are displayed on website.

## VI. CONCLUSION

The existence voting system which having a problem which is the cost to provide the ballot papers and the electronic voting machines that produced in India can be attacked to demonstration which is the system has been solved. Thus, the voting system in the Android application has their disadvantages. It included the problem when the phone was corrupted or damage, it will cause the error of the voting. Otherwise, the Android application for votingsystem was more efficient than the voting system that using a ballot paper. The android voting system apps was shown that the new system for the election day.

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