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A Survey on Secured E-Voting System Using Biometric

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ABSTRACT: Biometrics is the technique of using rival, non transferable, physical characteristics, such as fingerprints, to earn entry for personal identification. Since After the invention of the rival technology it has been being used in security systems and authentication. Presently, security fields have three different types of authentication, they are: Something we know: a password, PIN, or piece of personal information something we have: a card key, smart card, or token and something we are: a Biometric based computer networks and its access in the internet are the techniques which are known little and very rarely implemented. This paper deals with the accessibility of biometrics in a practical application like polling of votes-'e-voting' using a physical entity (finger print, Voice Recognition) through computer network.

KEYWORDS: E-voting, Biometrics Fingerprint & Voice Recognition, Authentication, MFCC algorithm.

I. INTRODUCTION

Here we are simulating the global voting system from anywhere. That means that the user can access cast they vote from them home PC, internet cafe, office PC. For this we are connecting the user PC with the voting server via Local Area Network (LAN). The user has to log on to the voting server via own PC. They will be asked for the authentication of identity. The user can then authenticate them ID using either Voice recognition or Fingerprint recognition Or Both.

The main concept of the project is to enable the voter to vote from any where. Moreover to stop fraud voting we are also giving a voter identification hardware which will prevent any hacker from giving false votes. One of the fundamental mechanisms for democracy is election. It is the way to collect the public opinions to form a democratic government. The traditional process of election is fairly uneven full, time consuming and has a cumbersome procedure in preparation and tallying phases. To overcome these difficulties electronic voting system (EVS) is introduced. EVS continues to grow as long as the world becomes more dependable on the new technologies. EVS provides a lot of benefits than traditional voting systems. It endeavours to enable capable and reliable elections. [3]

EVS is inexpensive because it is capitals are recyclable. Also it does not need any geographical vicinity of voters, and it provides better scalability for large elections meanwhile using EVS must satisfy some security requirements such as authentication, voter privacy, confidentiality, integrity, etc. Many security flaws were found because EVS is more vulnerable than traditional voting process. Digital data processing allows any manipulation, updating or copying in votes. Hence this results in a widespread fraud during the Election Day. Thus many professionals expressed their negative opinions on e-voting.

1. Ethernet based LAN: PC is interfaced with an Ethernet module. Using VB language and socket programming we are communication with PC. Here we have the IP address and port number. Once the user authenticated using Voice or fingerprint then login procedure is executed.

2. Speaker Recognition: Here we are using MATLAB and MFCC algorithm to recognize the voter using speaker recognition.

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3. Fingerprint Recognition: Here we are using Fingerprint module to recognize the voter using biometric recognition.

II. OVERVIEW OF E-VOTING TECHNOLOGIES

In traditional elections, a voter usually goes to the voting stations. After direct person-person confirmation with some IDs, the voter is permission to vote. The voter is then given a ballot which allows a single vote. At one time the ballot is used; it cannot be used another time. However, this ballot must also be unidentified. The ballot must identify the voter as being authorized to vote, but not reveal their actual identity, and the voter must as well be given guarantee of this. Traditional polling methods trust a lot of parties during the election.

Advertise of electronic voting, especially Internet voting, make a number of arguments in favor of its implementation. These are linked to technology, social problems and election management. First, electronic voting has the possible to make the voting process easier and more available for electors. This is especially right for improbable Internet voting and telephone voting given that ballots can be from any computer with an Internet connection or any working telephone. These latest methods considerably lower the cost of voting for many electors by generating many more entry points from which they are allowed to vote. There is the prospective to remove long queue at polling stations and better address accessibility problems for persons with handicaps, those troubling from illness, those serving in the military or living abroad, those away on personal travel. Single parents who may find it difficult to visit a traditional polling station.

1. **Eligibility**: Only qualified citizens are able to cast their votes.
2. **Anonymity**: Voters cannot be linked to their votes.
3. **Mobility:** - Voters can be able to cast vote from anywhere.
4. **Verifiability:** - Voters can verify whether or not their votes have been counted Or rejected in final result of the elections.
5. **Fairness:** - Each number of votes of a candidate should not be known before An election end.
6. **Uniqueness**: - Each voter can vote only once in each session of elections.
7. **Un-coercibility:** - Voters can overcome incidents related to coercion and Corruption.

The objective of voting is to allow voters to utilization their right to express their choices regarding specific issues, pieces of regulations, citizen self-motivation, constitutional amendments, recalls and/or to choose their government. Technology is actuality used numbers of as a tool to assist voters to their votes.[4] To allow the exercise of this right, virtually all voting systems around the world include the following steps:-

1. Voter recognition and authentication.
2. Voting and recording of votes.
3. Vote calculating.
4. Announcement of election results.

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III. LITERATURE SURVEY

1. Hanady Hussien, Hussien Aboelnaga, IEEE 2013. **"Design of secured E-voting systems."** is able to desire with the widespread use of computers and embedded systems. Security is the essential problem should be considered in such systems. This paper proposes a new e-voting system that fulfils the security requirements of e-voting. It is based on homomorphic property and blind signature plan. The suggest system is executed on an embedded system which serves as a voting machine. The system employees RFID to store all conditions that comply with the rule of the government to check voter eligibility.

2. Daniel petcu, Dan Alexandru stoichescu, The International Symposium on Advanced topics in electrical engineering; May 7-9, 2015. "**A Hybrid mobile Biometric- based E- voting system."** Information technology changes and gives shape to networked society all over the world today & its solutions are becoming main drivers in almost all field of human life activity. Although the acceptance rate of e-government applications is increasing e-voting is hardly accepted as main tool in its field because it shortages in offering good solutions to common problems like fraud, bribery, anonymous character of the vote and absence of good independent monitoring.

3. Urmila Shrawankar Dr. Vilas Thakare, "**techniques for feature extraction in speech recognition system"** The time domain waveform of a speech signal carries all of the auditory information. From the phonological point of view, very little can be said on the basis of the waveform itself. However, past research in mathematics, acoustics, and speech technology have provided many methods for converting data that can be considered as information if interpreted correctly. In order to find some statistically relevant information from incoming data, it is important to have mechanisms for reducing the information of each segment in the audio signal into a relatively small number of parameters, or features. These features should describe each segment in such a characteristic way that other similar segments can be grouped together by comparing their features. There are enormous interesting and exceptional ways to describe the speech signal in terms of parameters. Though, they all have their strengths and weaknesses, we have presented some of the most used methods with their importance.

4. Steven J.Anderson, A.C.M Fong, senior member, IEEE, Jie Tang, member, IEEE, "**Robust Tri-Model Automatic Speech Recognition for consumer Applications**." IEEE Transactions on Consumer Electronics, Vol. 59, No. 2, May 2013. Commercial automatic speech recognition (ASR) started to appear in the late 1980's and can proposal a more natural means of receiving user inputs than methods such as typing on keyboards or touch screens. This is a especially eventful consideration for small consumer devices such as smart phones. In many practical circumstances, however, presentation of ASR can be significantly. Compromised due to ambient noise and variable lighting circumstances. Prior research has shown that adding visual signals to standard ASR can mitigate the effects of ambient noise. ASR using adaptations of established techniques such as MT, DCT and MFCC.

5. M.Venkata Rao, Venugopal Rao Ravula, Pavani Pala. "**Development Of Antirigging Voting System Using Biometrics Based On Adharcard Numbering".** Now a day's voting process is exercised by using EVM (Electronic voting machine). In this paper we present and use implementation is to execute the progress of anti rigging voting system using finger print .The purpose of the project and implementation is to provide a safety and good environment to the customers is to electing the candidates by using the intelligent electronic voting machine by providing a rival naming to every user using the FINGER PRINT identification technology. Here in this project and satisfy we are going supply the at most security since it is taking the FINGER PRINTS as the authentication for EVM. Brilliant EVM is an Embedded based project and implementation. It involves

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microcontroller and interfaces. Intelligent EVM has been particularly designed to collect, record, store, count and display cent percent accurately.

6. Firas I. Hazzaa, Seifedine Kadr, This paper deals with the design and development of a **"Web-Based Voting System Using Fingerprint Design and Implementation",** in order to provide a high performance with high security to the voting system also we use web technology to make the voting system more practical. The new design is proposed an election for a university for selecting the president of the university. The proposed EVS allows the voters to scan their fingerprint, which is then matched with an already saved image within a database. Developed Web-based Voting System using Fingerprint Recognition. This system has provided an efficient way to cast votes, free of fraud, and make the system more trustable, economic and fast. We have used Minutiae-based fingerprint identification and matching with high accuracy.

IV. PROPOSED SYSTEM

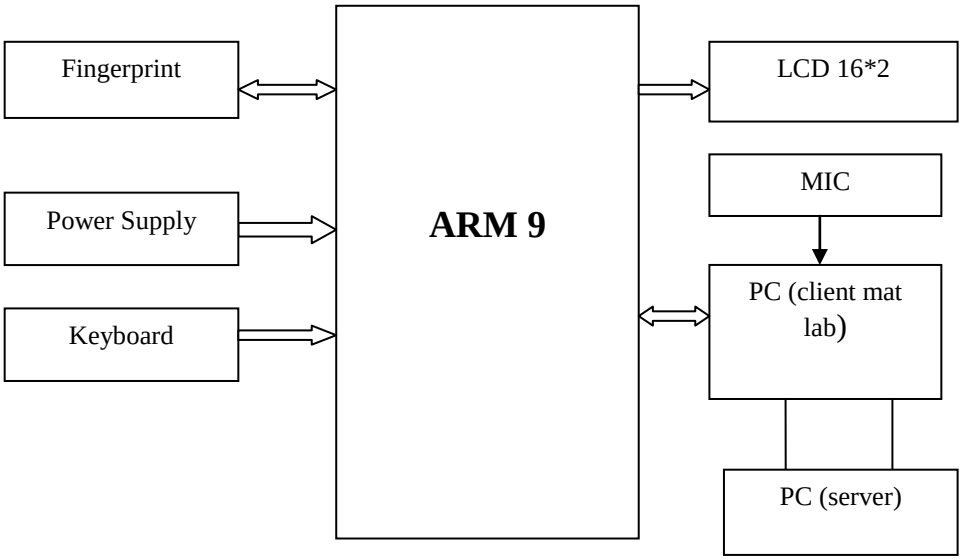

Fig.1. Block diagram of proposed system.

Proposed Architecture is online voting system. In this system there are three models.

1. Voter registration server.
2. Authentication server.
3. Vote recording and casting server.

Voter registration server, voter will be registered personal information and biometric information eg. Thumb Impression or voice recognition. Only authorized users are admitting to vote at the time of election. Proposing system user does registration process first. Send all information to authentication server send password and ID to voter after he/she is login. If it is authenticated then allowing for voting after voter cast his/her vote and this vote is encrypted form saving in vote casting and recording server.

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V.CONCLUSION

E-voting system using biometric is a prototype Evolution to using finger print module & voice recognition system using MFCC algorithm. As the need for voting system has started to increase and some countries has started to find for the solutions, this can be the starting point to improve and deploy in the real world conditions.

In this system I have tried to explain the importance of biometric technique. It is rival properties and its use areas especially in e-voting. We must to keep in mind that voting is not the only process during the complete voting operation. There might be some other security concerns that need to be considered when such an application is built for practical reasons. Proposes a biometric-based design that finds out such challenges and preserves transparency, secrecy, and anonymity along with other important services, using techniques.

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