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Online Voting System Linked with AADHAR Card

Sayali Shinde, Nikita Sherla, Sampada Zadgaonkar, Sapna Hulsurkar, S. P. Mone

Department of Computer Engineering, Marathwada Mitra Mandal's College of Engineering, Karvenagar, Pune, India

ABSTRACT: This paper aims to develop a secure online voting system which is linked with AADHAR card for accessing fingerprint biometric identification. This system enhances the security which is the need of the voting system.

KEYWORDS: Authentication, Online Voting, Biometric Fingerprint Scanner, Online Voting System, Direct Recording Electronic

I. INTRODUCTION

Nowadays,Election process plays very important role in a democratic country. The Election is a process for selection of a perfect candidate who will lead the nation. Recently in India Electronic voting system is used. In this system voter availability at in the city is compulsory, this is major drawback of electronic voting system. An Online voting system is the solution as voter can vote from anywhere.

The proposed Online Voting System linked with AADHAR card allows the voters to scan their Fingerprint, which is then match with an already saved image within a database that is retrieved from AADHAR card database. At the time of voting administrator will provide password to the voter for reducing fake voting.

II. LITERATURE SURVEY

In Secure Authentication for Online Voting System uses PIN,biometric images and steganography for authentication. Hash code is used to check if steganographic image is tampered or not. Pixel selection algorithm used will make PIN retrieval impossible[1].

In AADHAR Based Electronic Voting System using Fingerprint and Hex keypad has been designed successfully. Database consisting of the personal details should be updated every time before election.It is very difficult to design an ideal E-Voting system which allow perfect security and privacy with no compromise[2].

In Fingerprint and RFID Based Electronic Voting System Linked with AADHAR provide a security with RFID based Biometric votingmethod. And provides safety from alcoholic person whose comes to polling booth. This system interlinked with primary specification such as Voter ID, AADHAR ID and Biometric authentication. There is no scope to take place ragging in Election[3].

In Implementation of Authenticated and Secure Online Voting System helps in achieving the authenticity, Non-traceability of vote cast and security with confidentiality also being enforced. It provides secure voting password at the time of the registration which enables the voter to securely cast their vote along with biometric identification [4].

III. EXISTING SYSTEM

There is increasingly widespread adoption of Direct Recording Electronic – DRE voting systems. DRE system completely eliminate paper ballots from the voting process. The most fundamental problem with such system is that entire election things on the correctness and software installed within each of the voting terminal.

An Electronic Voting system is a voting system in which the election data is recorded and processed as digital information. E-voting is referred as "Electronic voting". E-voting is an election system that allows a voter to record their ballots in an electrically secure system. The main drawback of this system that it encounter s the non- availability

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of the personal computer by any individual necessitates the setup of an e-polling booth which might not reduce the cost of conducting an election in big deal[4].

IV. PROPOSED SYSTEM

In the Online voting system, there are four modules.
4.1 Voter Registration
4.2 Authentication
4.3 Vote Casting and Recording
4.4 Vote Counting

4.1 Voter Registration: In voter registration phases, voter will provide personal information and fingerprint which is biometric information after registration user is allowed to the vote at the time of election.

4.2 Authentication: At the time of voting, voter has to passed through authentication phase if he is authentic voter then he will be allowed to vote. At the time voting voter first login and his credential is checked by the system to verify if voter is authentic or not.

4.3 Vote recording and Casting module: After successful authentication a ballot is displayed. Then voter cast their vote by selecting the one of the candidate.

4.4 Vote Counting: After voting time finished no one is allowed to vote.Vote is counted by the system and result is displayed.

V. SYSTEM ARCHITECTURE

This system divides into two modes namely as
5.1 User Mode
5.2 Administrator Mode

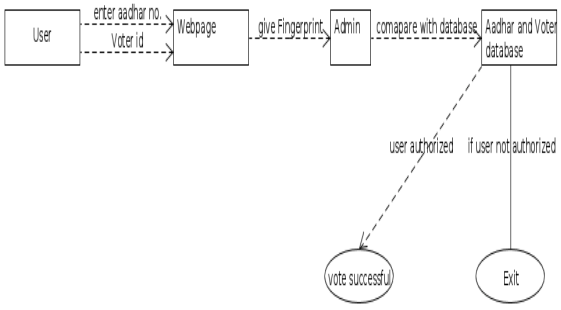

Fig 5.1 System Architecture

5.1 User mode: This mode is for the general voters. At the first they need to enter the AADHAR card and voter ID number in the OVS. The OVS will search that AADAHAR card number in the “vote” database in place of “AADHAR” database[5] because while configuring the system the OVS had alreadyselected the AADHAR details of the people of a specific locality from the AADHAR database and stored into the vote database. Next it will seek the fingerprint image from the voter with which it compare the stored image in the “vote” database. If user is authorized then user can vote at the time of the election.

5.2 Administrator Mode: To use the system first they need to register themselves with the system. If anybody register already he/she can at once unlock the administrator dashboard by typing user-name and password in the system. Those person who have not register themselves with the system, they need to register them as administrator by typing their

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own AADHAR card number in specify space. The system will then search the AADHAR card from the "AADHAR" database. Next to verify the authenticity of the administrator, the system will seek the fingerprint from the user. After getting the fingerprint image, the system compare the fingerprint with the stored one in the "AADHAR" database and if it is matched, then administrator will provide unique user-name and random password to the user for future use at the time of elections.

The administrator of this system can configure a Online Voting System(OVS) as user can vote from anywhere. Administrator also count the vote and display the result after the elections. It also manage the users related data like delete the voter, insert new voter, update the additional data.

VI. ALGORITHM

6.1 Pixel selection algorithm: This algorithm generates a unique numbers by using prime numbers and generate a numbers.

```
//Following pixels are selecting for hiding
//secret messages of 288 bits
int[] pixel_selection()
begin
p=prime numbers;
greater than number of voters
g= generator(p);
for i=1 to 288
pixel(i)=power(g,i)%p;
end
//generate generator
int generator(p)
begin
g= random (p-1)
flag= 0
for i =1 to p-1
gpow(i)=(pow(g,i))%p;
for j=1 to i
if(gpow(i)=gpow(j))
flag=1;
break;
end
end
if(flag=1)
return(generator(p))
else
return(g)
end
```

Fingerprint matching techniques can be classified into some types

Minutiae-based matching: This is the most popular and widely used technique. Minutiae are extracted from the two fingerprints and stored are sets of points in the two-dimensional plane[5].

Pattern based matching: Pattern based algorithm compare the basic fingerprint pattern(arch,whorl and loop) between a previously stored template and a candidate fingerprint. In pattern based algorithm, the template contains the type, size, and orientation of patterns within the aligned fingerprint image[5].

A fingerprint recognition system operates either in verification mode or in identification mode. The various stages in a fingerprint verification system are shown in fig 6.1

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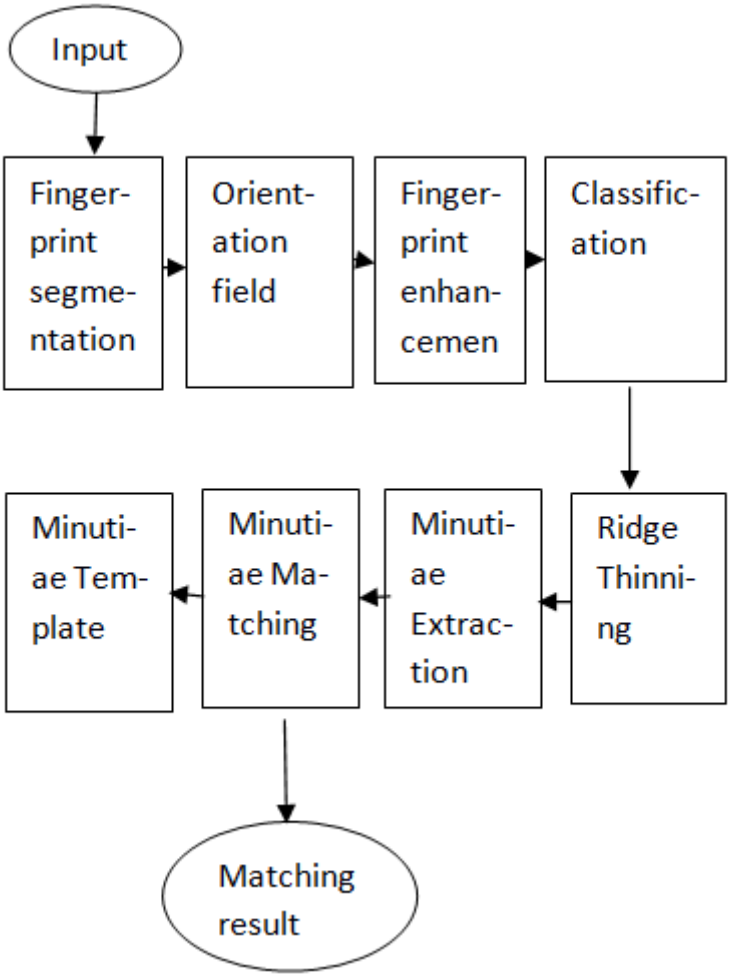

Fig 6.1 Architecture of Fingerprint Verification

VII. ADVANTAGES

Reduced costs are enjoyed when the expenses of printing, mailing and tabulating paper ballots are lessened or even eliminated entirely from the election process.

Ability to correct mistakes allows voters to go back and correct any mistakes before final submission of their ballot. Once a ballot has been submitted however, it is final and can't be altered.

- **Empowerment:** Voting is the most powerful way for members to have a voice in the leadership and direction of their association. When allowed to vote in fair and open elections, members feel a greater sense of value, ownership, and responsibility. Online elections help empower members of associations, societies, and other democratic organizations by making voting easy and convenient.
- **Accessibility:** Online voting allows association members to access their ballots from anywhere at any time, provided they have an Internet connection. This makes casting a vote convenient and fast. Members can cast their votes from home, from work or "on the go" via their mobile devices.

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- **Fast, accurate results:** With Online voting there are no rejected, mis marked or invalid ballots. Results are automatically calculated, eliminating the need for manual tabulation and dreaded recounts. Computerized tabulation allows election managers to quickly announce decisions and results.
- **Appeal to younger members:** According to the Internet and American Life Project, 95 percent of Americans between the ages of 18 and 29 use the Internet. This means that Online options such as web voting might be a great way to get younger members involved in the decision-making process.

VIII. CONCLUSION AND FUTURE SCOPE

The proposed secured Online voting system uses AADHAR card and Voter Id for authentication. Database consisting of the details like name,address,age,gender and fingerprint should be updated every time before election. This system affords additional security by allowing voter to vote only once by comparing unique identification. Our main proposal is to enable the user to cast his vote using OVS without going to booth. User can cast his vote from his home or any way and to reduce the proxy vote and in booth capturing situation this system help us. Due to easy and secure voting the voting percentage also increases drastically. Our future work is to interlink all the polling booths within a state with proper Internet security so that voter can vote from any booth belonging at the same time.

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