Face Recognition and QR Code Authentication to Generate Result at an Instance of Time

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Abstract:
Due to the influence of mobile social network, more and more people are interested in using a mobile device to perform several social activities such as shopping, booking tickets, where we will make voting to be smarter and easier by developing an application called Mobile Voting Application (MVA). In order to select a representative in a constitution area, there are many and implementation techniques in both traditional paper ballot and electronic voting system. In general elections, voters are allowed to participate in polling process personally. However, Mobile Voting Application allows user to participate in the election process from any place, no matter where there are at the time of voting. In present scenario, if we have great interest in participation validator and voter, no matter where they are at the time of voting. In present scenario, the electronic voting machine counts the ballot automatically. This is a new technology and a part of digital India. Here we cast the vote through internet. This is very fast, portability, mobility and reusability.

DIRECT RECORDING ELECTRONIC VOTING MACHINE:
DRE contains keyboard, touch screen or buttons press to poll. Here counting the vote is very fast.

PUNCH CARD:
The voter punches a hole on the blank ballot. It can count votes automatically but if the voter’s perforation is incomplete, the result is probably determined wrongfully.

ELECTRONIC VOTING SYSTEM:
In this we cast our vote in an electronics machine. It contains some counters and registers. It has mobility, secure, tally speed and cheap.

ONLINE VOTING SYSTEM:
This is a new technology and a part of digital India. Here we cast the vote through internet. This is very fast, portability, mobility and reusability.

III. RELATED WORK
Vinod George M and P.P.Sebastian [1] proposed a security for remote Internet voting using trusted third party platform. Here we combine all the three authorities’ registration, validator and teller to be a one.

Trisha Patel, Maitri Chokshi and Nikhil Shah [2] proposed a solution in their paper to tackle the problem of large man power and more time consuming. This paper addressed encrypting the data storage that is highly secured through face recognition. This helped us to ensure accurate and secure implementation.

Jan Lang and Rastislav Kastrab [4] proposed Server Client Architecture; the client part doesn’t need to be implemented for web based solution. It will be provided by the Internet

Keywords: Face Recognition, QR Code (Quick Response Code), MVA (Mobile Voting Application).
Browser. In MVA we used wireless technology and centralized database is also used to store all the votes.

M. Bala Krishna and Arpit Dugar [8] proposed a security by encrypting the product details in QR code. In Mobile Voting Application genuineness is identified by scanning QR Code and by using this we can add more information.

Piyush Agarwal, Sanjay Ohja, Pallavi Dhivya [3] proposed Voting is done by tele-voting (i.e. people who don’t have internet connection can cast their vote using SMS) Voting can be done via e-mail(candidate who were absent at the time of actual election date can vote through absentee voting).

IV. PROPOSED SYSTEM

Our proposed systems provide voter to cast their vote, votes will be counted and result will be displayed. For proposed system it required five elements

1) Smart phones
2) Aadhar database
3) Vote collecting and result phase server.
4) Election Commission Server(ECS)
5) Election Commission Database

Figure.1. System Architecture

Proposed system consists of three steps:
A. Authentication phase
B. Voting phase
C. Vote collecting and result phase

A. Authentication phase

In this phase, a voter will be asked to provide the personal details by scanning the QR code in the aadhar card, QR code is a two-dimensional barcode contains the voter's information, which can be read by an imaging device such as a camera, until the image can be approximately interpreted. This phase can be further authenticated through Support Vector Machine which addresses the building of face recognition system. Recognition is performed by projecting a test image onto the subspace spanned by the Eigen faces and then classification is done by measuring minimum Euclidean distance. Smart phones have within camera can be used to take the image of a voters face and can be sent to the server. The server uses SVM to match the image which is already stored in the aadhar database.

Figure.2. QR Code Scanning

B. Voting phase

In this phase, the Election Commission Server(ECS) will send a candidate list to the authenticated voter, the candidates’ list will be selected by the server to the voter is done by validation on the details which it received from aadhar card scanning. Both verification and validation are done based on the details that the server received by scanning the QR Code. Based on the DOB(Date Of Birth) of a person, it validates whether the person is eligible to take part in the voting process. And in the same way, it checks for the permanent address specified in the aadhar card and then displays the candidate list according to the pin code specified in the aadhar card.

Figure.4. Voting Phase

C. Vote collecting and result phase

The casted vote gives support to are collected, counted based on the part and the outcome will be displayed. The person giving voice in selection are let to give support to only for one stage in time of time(i.e 5pm on the day of giving support to)

Figure.5. Report Generation
V. RESULT & ANALYSIS

This system uses unique Aadhar Card number to maintain the voters account, face recognition as biometric security through mobile phone, QR code scanning for cross verification of the database. Thus the system provides multilevel security which is the advantage over earlier existing system.

- **REDUCED COST**
  Mobile voting system gets changed to another form the materials required for printing and making distribution ballots. Mobile based voting, in particular, offers superior economies of scale in connection with the size of the electoral roll.

- **INCREASED PARTICIPATION AND VOTING OPTIONS**
  The mobile voting systems offers increased convenience to the voter, encourage more voters to cast their votes remotely, and increases the chance of participation for mobile voters. Additionally, it permits access to more information regarding polling options.

- **GREATER SPEED AND ACCURACY PLACING AND COUNTING VOTES**
  The Mobile Voting Application processes help to minimize the number of miscast votes. The time consuming for counting the votes greatly reduces and also allows displaying the result at an instant of time.

- **GREATER ACCESSIBILITY FOR THE DISABLED**
  The mobile voting applications allow citizens with disabilities - to cast their vote independently and privately.

VI. CONCLUSION

The Mobile Voting Application using a Smartphone, described over here, is the multiple security systems which can be used in the election. The user just has to have their Aadhar Card and the Smartphone which has a high pixels quality embedded in it. As the application based on the system will be operating online, the user can cast their vote from their current location. The voters don’t have to personally go to the polling booth to cast his/her vote. Thus, encouraging increasing participation in a voting process.

VII. REFERENCES


