ADVANCED VOTING MACHINE USING FACE RECOGNITION

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Abstract: *In every country in the world, elections play an important role in selecting its government by its people's choice. The elected leaders make good decisions to develop the country. For this reason every citizen should take the responsibility to vote for their country's development. Fake voters play a deviating and disruptive role in elections. Our project titled advance voting machine using face recognition will provide better safe and secure voting system. Our objective is to ensure authentic voting system with highly secure mechanism. The individual person data base like voter id details and images are stored in server. During the voting session, the person and his database image matching is verified. Based on the image recognition results, the person is allowed or prohibited from voting. With this systematic verification, fake voters could be prevented. In case of fake attempts, the original voter will also be alerted via GSM message.*

1. Introduction

In our country voting system not fully secured. Because the existing system false votes put a big role. Most of the person not willing to come vote on Election day. Most of the people get a money from parties and selling his votes and done a false vote. For this we creating a project for secured voting system using image processing all the individual person details are stored in database. In every individual person is voted using image matched and done is vote. We can easily found a false votes and the some other person vote is done other person the GSM is used to alert original person via message.

2. Existing System

The existing system focusing on RFID based electronic voting machine for authentication and sorting out the wired electronic voting problems. This technique includes the overall technical idea behind using Aadhar card for voting. Electronic Voting Machine (EVM) is a device, used to count ballot and record votes instead of doing it manually using human resource to record and count votes. Several problems are associated with the manual counting of votes that is laborious, erroneous and time consuming. This makes the entire system very inefficient. This project discuss in feature the of a solar power-driven EVM prototype which is efficient and allows the user a relief from the laborious act of vote collection and counting. At the occasion of voting in the elections, the Barcode-Scanner also used to decode the Enrolment ID printed on the Aadhar card.

3. Existing System Block Diagram
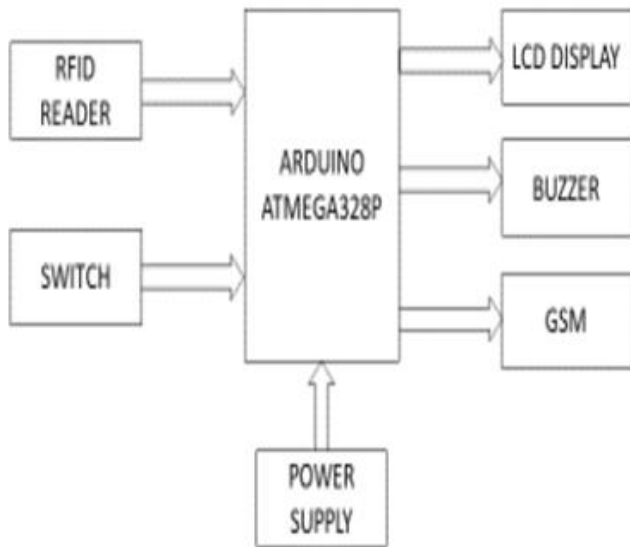
3.1 Drawbacks

- It is less efficient to find false votes.
- It counting based on barcode it will take more time.

4. Related Works Proposed System

The working principle of our proposed is based on image processing. Initially the web camera finds an image of matched person database through using image processing using mat lab. . Our objective is to make a secure voting system. The individual person database like voter id details images and are stored in server the image person should vote as per the matching image. We can easily found a false votes and the some other person vote is done other person the GSM is used to alert original person via message. In this effective way we are creating a advanced voting machine. Everyone should done his own vote and avoid false vote to elect a leader by people choice.

5. Hardware Requirments

- Arduino Uno
- LCD display
- Web camera
- PC (image processing)
- RS232
- GSM
- Alarm

6.Proposed Block Diagram
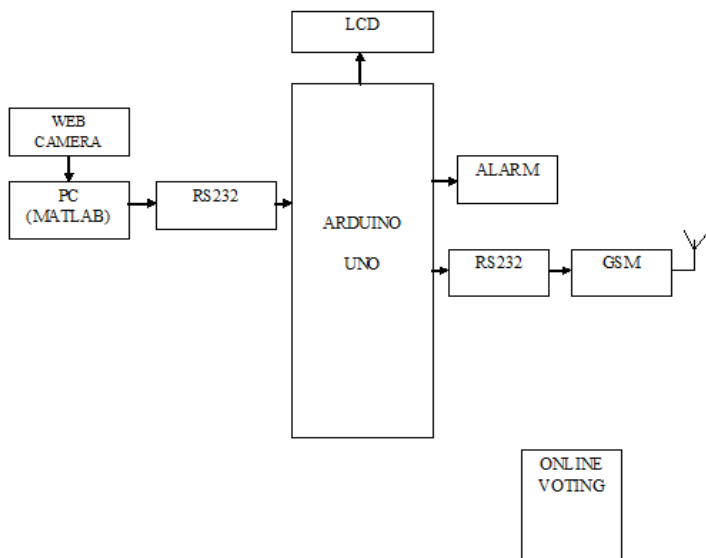
7. Block Diagram Discription

7.1 Arduino uno

Arduino Uno is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz quartz crystal, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; basically connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get in progress.. You can tinker with your UNO without disturbing too much about doing something wrong, worst case scenario you can replace the chip for a few dollars and start over again.

7.2 Liquid Crystal Display

LCD (Liquid Crystal Display) is a variety of flat panel display which uses liquid crystals in its primary form of operation. LEDs have a large and varying set of utilize cases for consumers and businesses, as they can be usually found in smart phones, televisions, computer monitors and instrument panels.

7.3 Web Camera

A webcam is a video camera that supply or streams an image or video in real time to or through a computer to a computer network, such as the Internet. Webcams are in general small cameras that sit on a desk, connect to a user's monitor, or are built into the hardware. Webcams can be used during a video chat session involving two or more people, through conversations that include live audio and video

7.4 GSM

2G networks developed as a replacement for first generation (1G) analog cellular networks. The GSM standard originally describes a digital, circuit-switched network optimized for full duplex voice telephony. This stretched out over time to include data communications, first by circuit - switched transport, then by packet data convey via General Packet Radio Service (GPRS), and Enhanced Data Rates for GSM Evolution (EDGE).

7.5 Digital Image Processing

Digital image processing has numerous advantages over analog image processing. It allows a lot wider range of algorithms to be functional to the input data and can avoid problems such as the build-up of noise and signal warp during processing. While images are defined over two dimensions (perhaps more) digital image processing might be modeled in the form of multi dimensional system.

8 System Module

MODULE DESIGN

The proposed system consists of two modules,

- User Module
- Administrator Module

8.1 User Module

User interface consists of a login first name and unique password using which he/she can login into the online voting system. This will be complete by the administrator to the user. Once the user has logged in, he has the right to view the names of the candidates listed by the administrator, view the results once the termination dates of the election. The user module constitutes only one sub module.

8.1.1 Candidate Registration

This facilitates of voter analysis the register form are enter the details and finally submit the details in check the details in administrator so your particular details are true allow the registration. Or else cross check the details, this details are false directly reject your registration.

8.1.2 Login

Every one voter is provided with single username and password by hand by the administrator. The voters use the username and password for login and implement the fundamental right of voting.

But incorrect username and password entered, the right to use to is denied to the user. Moreover also voter is allowed to vote only once. This is the safekeeping feature provided against external access of the system.

Later than login the voter enters the voter home page, which provides the links.

8.1.3 Voting System

This provides the voter with a record of candidate with in his/her constituency beside with selection option (radio button) to select the chosen candidate from the list. If the voting date is facing termination date, the vote goes valid else goes unacceptable.

8.1.4 View Result

This provides graphical and user pleasant representation of the votes obtained by all candidate. It comprises the percentage of the votes obtained by each candidate. But the end result can be viewed only after the termination day of the election.

8.1.5 Logout

This provides an choice for the voter to quit the session, while in the voter home page.

8.2 Administration Module

Administrator interface consists of a login name and single password using which admin can login into the online voting system. Administrator has the key control of the system. Via logging into the page it can perform the following tasks.

8.2.1 Add Consultancy

At this time the election to be conducted is selected. To add an election the constituency should be selected and termination day of election should be specified.

8.2.2 Voter List

Here we can view the voters list. Each constituency will be having split voters list.

8.2.3 Candidate List

The roll of candidates participating in the election can be seen. It contains the candidates name, party name and party symbol.

The sub-modules of administrator are:

- Voting formation
- Voters Registration
- Candidate Registration
- Counting & Categorization of Results

Voting Formation

Now the eligible voters who are acceptable to login to the system can utilize the right to vote. Each voter can register a single vote to a candidate's favours in his/her constituency. The security events taken within the system prevents them from exercising their vote over again i.e. the second vote by the same user goes cancelled. The opening and ending day of the election are specified by the administrator. The user should have an identity card and he must be in voters list.

Voters Registration

The registration method of all the eligible voters .This registration method is done by the administrator. According toward voter's database each voter is provided with a unique identification codes which includes username and password.

The details of the voters include username, password, name, address, gender, constituency, image etc. The voter list can be viewed by anyone accessing the webpage. The admin can analysis the voter list with in his homepage.

Candidate Registration

The registration of the candidates in every constituency is done by the administrator. The features of the candidate contain name, address, gender, his/her constituency party and image. Through the candidate registration, candidate list with the certain information of the candidates. The candidate list can be viewed by admin and the vote within their respective homepages.

According to candidates database (guide) each details of the candidates are store up in database controlled by the admin including candidate's particulars.

Counting and Categorization Of Result

As soon as the voter votes, the number of votes obtained by the selected candidate is incremented by 1.The end result is published only after the voting process is ended. It is available from the next day after the termination day. Here we illustrate the result in the graphical representation according to the percentage of vote attained by the candidate. Result can be analysis by everyone who visits into the site without any authentication problem. A link to view the result is reserved in the index page and both admin and voter can view the result in their relevant homepages. When the user clicks the result link, before the termination day of the election, "Result not available yet" Message will be displayed. The result appears with their party symbol on the top of the graph representing the percentage of vote attained by each candidate.

9. Conclusion

In this effective way we are designed advance electronic voting system using Image processing. This method of voting is more secured comparing to other voting systems. This method we avoid false votes and easily find by election office server. It will take less time count and secure results with election commission own server. Voting is fully based on image processing, in case false vote occur the emergency alarm will activated and the particular person should arrested. We can easily found a false votes and the some other person vote is done other person the GSM is used to alert original person via message. In this effective way we are creating a advanced voting machine. Everyone should done his own vote and avoid false vote to elect a leader by people choice.

10. Future Work

Moreover such technology can be useful in tracking the lost object under dynamic environment. Further enhancement of this work can be extended with stereo depth analysis of face detection using two image sensor interfaced with High speed Processor. Experimentation with the other face recognition algorithms such as ICA, Markov models, 3D modeling etc. Is one such avenue. The frame rate and the pixel size can be increased to improve the performance. The algorithm may be optimized to reduce the recognition timing.

Acknowledgment

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