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Real Time Face Recognition based Electronic Voting Machine using Python GUI

P.D.R. Vijaykumar[1], G. Bharathi[2], V. Sasinisha[3], D. Shilpa[4], M. Subha Shree[5]

[1]Head of Department, Department of Computer Science Engineering, INFO Institute of Engineering, Tamilnadu, India
[2,3,4,5]UG Student ,Department of Computer Science Engineering, INFO Institute of Engineering, Tamilnadu, India

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Abstract - *Electronic voting machine has already been ahead of and widely used in many developed countries. But most of them use face detection. In developing countries RFID for each person does not exist. And using RFID is still a priceless solution. keeping up with these problems we have developed this project where PC will be used as host. This computer has the ability of image processing and control complete voting machine system. A camera will be used to take picture of citizen face recognition identify that this user is valid voter for that region. If the citizen is valid and then the person will be allowed to submit his/her vote. Each voting was stored in the text file format. At the end of the polling time that data will be handled by the authorized polling officer with the OTP method.*

Keywords: *RFID, Camera, Face detection, OTP*

1. INTRODUCTION

Electronic Voting is the standard means of regulating elections using Electronic Voting Machines, sometimes called "EVMs". Prior to the introduction of electronic voting, India used paper ballots and manual counting. The paper ballots method was widely criticised because of fraudulent voting and booth capturing, where party loyalists captured booths and stuffed them with pre-filled fake ballots. The printed paper ballots were also more expensive, requiring substantial post-voting resources to count hundreds of millions of individual ballots. Embedded EVM features such as electronically limiting the rate of casting votes to five per minute. Indian EVMs are stand-alone machines built with once write, read-only memory. They do not have any wireless or wired internet components and interface. The M3 version of the EVMs includes the VVPAT system. Keeping these problems in mind we have developed this project where raspberry pi will be used as host.

2. PROPOSED SYSTEM

Proposed system consist of Raspberry pi, Face verification craft, Biometric Based Person description. Proposed system having large storage capacity so we can store more number of candidates list and also store more number of votes during election period .It required less space, easy to access and user friendly. SMTP (Simple Mail Transfer Protocol) Notification is also used to reduce fake voting.

2.1. RASPBERRY PI

The Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. It is a accomplished little device that empower people of all ages to explore computing, and to learn how to program in languages like Scratch and Python. It's adequate of doing everything you'd expect a desktop computer to do, from browsing the internet and playing high-definition video, to making spreadsheets, word-processing, and playing games. What's more, the Raspberry Pi has the qualification to reach out with the outside world, and has been used in a wide array of digital maker projects, from music machines and parent detectors to weather stations and tweeting birdhouses with infra-red cameras. We want to see the Raspberry Pi being used by kids all over the world to learn to program and discern how computers work.

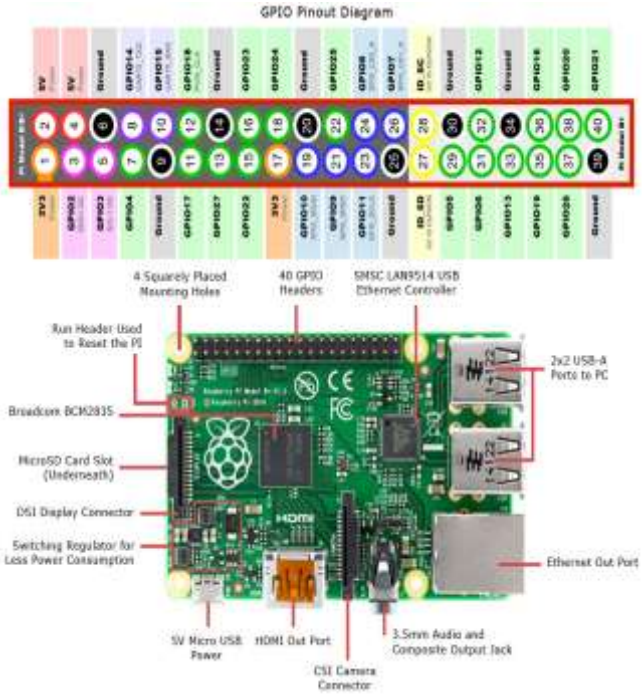
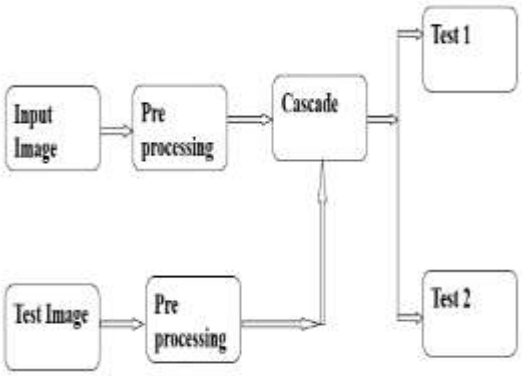


Fig 2.1. Raspberry pi

2.2. PYTHON

Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms. The Python interpreter and the extensive standard library are freely available in source or binary form for all major platforms. The Python interpreter is easily extended with new functions and data types implemented in C or C++ (or other languages callable from C). Python is also suitable as an extension language for customizable applications.

3. BLOCK DIAGRAM



3.1. Block Diagram

Face-1: Real time connecting for Web camera using Face detection and Recognition.

Face-2: update the Training Images and it create for GUI registered for send the Voting mail.

A camera records and stores photographic image in digital form. The laptop web cam will be open in current capture Image, in addition to still images. Capture is usually accomplished by use of a photo in camera capture the images. It detecting the face detection and classification in cascade Classifier.

4. VOTING PROCESS

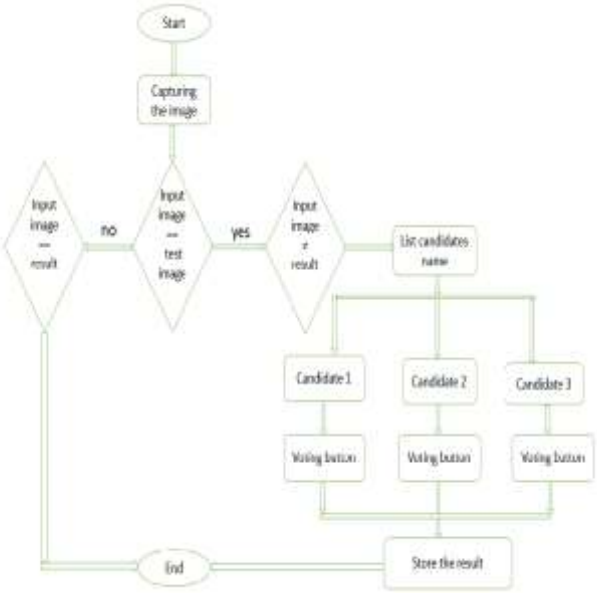


Chart 4.1. Voting Process

If the voter stands in front of camera then the camera start capturing the image of voter its called input image, then the input image is compared to pre stored image or voters list image(Test image). And also comparing to already voted people image. If the voter is in present of voters list and also not present in already voted people list then only the voter is allowed to enter voting process. Voting process involves three major steps. First list the candidate names, second when a voter presses voting buttons to corresponding candidate then the 'voting count' for the respected party or candidate, is increased by one each time. Finally the voter move away from camera then the voting process comes end. The above process repeats no of time based on number of voters.

5. SOFTWARE WORKING

Fig 5.1. Software Working

6. ADVANTAGES

- Secure Electronic voting system using biometrics technique with face detection and recognition.
- SMTP (Simple Mail Transfer Protocol) Notification.
- Good Security.
- High quality receiving data.
- Easy to access and good accuracy.

7. CONCLUSION

The project can be worn for voting since it overcome all this draw backs of ordinary voting machine also administer additional surveillance. Its main asset is that the face structure of every person is unique and hence this system completely reduces the chance of invalid votes. The system can be manufactured simply as well as cheap and casting vote becomes easier by the process of voting from any place inside Tamil Nadu.

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