

# SMART VOTING SYSTEM USING MACHINE LEARNING

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**Abstract** - The basic concept of this mission is to create a digital voting system as a way to get rid of them cheating manual voting structures such as the paper voting system, in this the chance of casting a vote is more than once and before. The proposed machine includes several layers of verification to ensure reliability device. With the inclusion of a biometric fingerprint scanner, every voter gets into the gadget that is easiest after them be diagnosed and checked against a given database of registered voters. Once the matching fingerprint is paired with the records provided, the voter will be allowed to proceed to select the preferred candidate from the panel buttons. The final vote is then displayed on the Liquid Cristal Display for voter pride. Proposed project it displays transparency and also carries the characteristic of being autonomous for the duration of the operation path. Those who are not casting the vote they get the warning message on their mobile.

**Key Words:** *Raspberry Pi, GSM, Fingerprint Sensor.*

## 1. INTRODUCTION

A separate commission called the Election Commission of India (ECI). This commission is not favorable or does not support any political party. Security is at the heart of the electronic voting process. Hence the need to design a secure electronic voting system is very important. Usually, mechanisms that ensure safety and election privacy can be time-consuming, expensive for election administrators, and inconvenient for voters. There are different levels of electronic voting security. Therefore, serious precautions must be taken to keep it out of the public domain. Security must also be used for concealment voices from publicity. EVMs or Electronic Voting Machines provide the voter with a button for each option that is connected by a cable to an electronic ballot box. EVM consists of two units - control unit and electoral unit - and these two are connected by a five-meter cable. When the voter presses the button against the candidate he wishes to vote for, the machine will lock itself. The voter enters the polling station and presses the button for the candidate of his choice. At the end of the survey the chairman removes the plastic cap on the control unit and presses the CLOSE button, which prevents the EVM from receiving more votes.

It is hard to make the voting system trustworthy only because it has high security requirements: confidentiality and integrity. Confidentiality means all voters get assured about the privacy of votes and prevent selling of votes. Integrity means the assurance of election results and the votes are counted

correctly. Integrity is easy to get through a public show of hands, but this dissipates confidentiality and confidentiality comes from the secret ballots, but this fails the integrity.

## 2. LITERATURE SURVEY

“Aadhar Card based smart e-voting system”, Author K. Lakshmi. This paper presents, the paper proposes the need of a protected voting system to avoid the unlawful voting The authentication of an individual are made using biometric and capability of the voter is affirmed using the Aadhar. In this system the data stored in the Aadhar card act main criteria for authentication and conformation. The security is provided through biometrics such as fingerprint. The fingerprint information stored in the Aadhar is taken as the reference and used for authentication at the time of voting. The proposed system prevents the bogus voting (i.e.) the voting of an illegal citizens.[1]

“RFID Based Smart Voting System” B. Surendra Rao. This paper describes the design, operation of smart EVM using microcontroller, RFID, GSM technology to improve the election process by avoiding the electoral fraud and to ensure safety, security, reliability, guarantee and transparency and smooth conduct of elections in the country as the voting is of crucial importance in the society where people determine its government. This paper talks about an innovative approach for voting process where the device communicates with the RFID tag which is embed in the voter ID card [2]

“Advanced voting machine using face recognition”, is paper of A Samundeeswari. This paper state that, project is advance voting machine using face recognition will provide better safe and secure voting system. 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.[3]

“Arduino Based Authenticated Voting Machine (AVM) using RFID and Fingerprint for the Student Elections”, is paper of Vinayachandra. This paper state that design of an advanced voting system is a difficult task as many main requirements have to be met. The secrecy of a poll should be maintained. No proof of which candidate gets particular voting shall be provided by the voting system.

The authors implemented the Authenticated Voting Machine in the College elections in this paper to ease the process and improve transparency. The concept is still in its infancy and requires more research to keep it stable and theoretically strong. To ensure protection, the model uses radiofrequency and fingerprint recognition.[4]

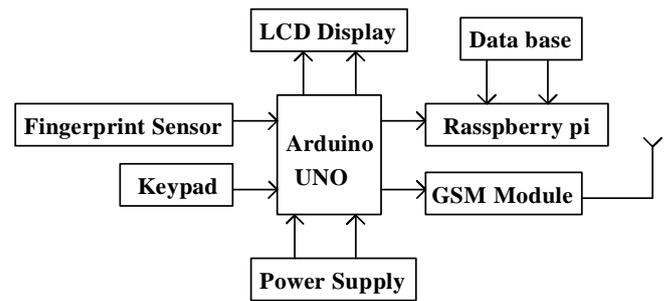
“RFID Based Smart Electronic Voting System for Reducing Electoral Frauds Using Arduino”, is paper of Ms. A. Achammal. This paper describes the design and operation of Smart Electronic Voting Machine using Arduino UNO, RFID, to improve the election process by avoiding electoral fraud and to ensure safety, security, reliability, and smooth conduct of elections in the country. This paper talks about an innovative approach for the voting process where the device communicates with the RFID tag, which is embedded in the voter ID card. When the voter scans his card, the controller checks the ID, and if it matches, the LCD displays the result.[5]

**4. OBJECTIVE**

The main objective of this review is to design a E-voting mechanism based on IoT, to avoid fraudulence and Malpractice by the voters who have registered as a voter and to improve the security performance by making finger print authentication, it helps in providing easy access to cast the vote. The E- voting casting system is best suitable for India because of its big geographic locality voting population literacy stage and illegal. The biometric vote casting device is a versatile solution for mal practices within the loose and honest electoral process.

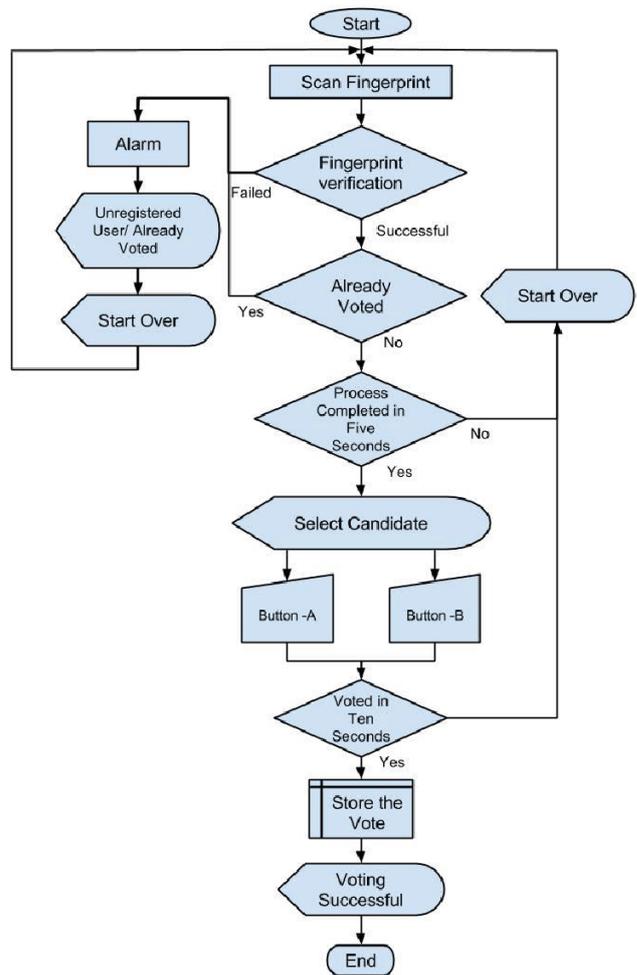
**5. PROPOSED SYSTEM**

Biometric Finger print devices are used in the Electronic Voting machine for voter verification. We have designed a finger print based voting machine where there is no need for the user to carry his ID which contains his required details. The person at the polling booth needs only to place his Finger on the device, thus allowing the acquisition of an on-spot fingerprint from the voter which serves as an identification. This Finger print reader reads the details from the tag. This data is passed onto the controlling unit for the verification. The controller fetches the data from the reader and compares this data with the already existing data stored during the registration of the voters. If the data matches with the pre-stored information of the registered fingerprint, the person is allowed to cast his vote. If voter cast his vote then message is send on his mobile. If not, a warning message is displayed on LCD and the person is barred from polling his vote. The vote casting mechanism is carried out manually using the push buttons. LCD is used to display the related messages, warnings and ensuing results. Those who are not casting the vote they get the warning message on their mobile.



**Fig 1: Block Diagram**

**6. Flowchart**



**Fig 2: Flowchart of system**

**7. ADVANTAGES**

- Providing the preventive measures system for voting.
- It completely rules out the chance of invalid votes.
- Its use results in reduction of polling time.
- Results in fewer problems in electoral preparations, law and order candidates' expenditure.
- It is capable of saving considerable printing stationery and transport of large volumes of electoral material.

## 8. APPLICATIONS

To develop a secured electronic voting system using fingerprint biometric techniques that would tackle all the drawbacks presented in this project and satisfy e-voting functional and security requirements towards achieving credible elections at all levels.

## 9. CONCLUSION

Corruption can be minimized through honesty and sincerity. This system is a small contribution for a fair election. But corruption in voting system cannot be completely erased through this system if there is no sincerity. The new system prevents access to illegal voters, provides ease of use, transparency and maintains integrity of the voting process. The system also prevents multiple votes by the same person and checks eligibility of the voter. Some of these advantages are lesser cost, faster tabulation of results, improved accessibility, greater accuracy, and lower risk of human and mechanical errors.

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