

# E-Voting Using AI

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## ABSTRACT

During a pandemic situation like COVID-19, it is very difficult to conduct the election in regular basis. Hereby we came across with a solution to conduct an online election. So, we are planning to design a website application which contains the login page to verify the users by their voter id, username and password. The vote casting webpage contains the details of the ward candidates. The vote is validated by OTP sent to the registered mobile numbers of the users. After OTP verification, image verification is done which enhances the security features in our web application. After the successful verification, the voting security is guarded with AI proctor monitoring software which watches each and every movements of the voter and also the suspicious activities around the voter, if there are third party present nearer to screen and audio will also be recorded in background. Users can vote for the candidates by AI proctoring enabled. When the vote is casted, the same user's login will be expired. The user who already voted, can't vote again. Admins of the election commission can see the voting status anytime by logging into the admin side website. The results of the election will be declared by the governs of the election commission at some specific time.

**Keywords :** OTP, Pandemic, COVID, Election.

## I. INTRODUCTION

Conducting election online has been a difficult process since from the ages of internet. It's a crucial role to conduct election online because of the security basis. When we face a pandemic situations occurred during the year 2020 like COVID (corona) people hesitate to come out of their home even for their regular wages, So conducting election at the rural areas or at government places will be difficult. Hence we wanted to give back peoples voting right to choose their leader to rule them. Cities will be highly

benefited by this system and DIGITAL INDIA focus will also come to real world at one day then everyone will be benefited by our invention. The web based portal will be AI proctored, user-friendly and overwhelming UI/UX design is implemented where users can cast their vote with ease and safely . Security features is also made at the high expertise such that OTP verification , Image capturing during vote validation, AI proctoring, then vote is recorded and the results will be shown in the election commission webpage where unique login for

government officials and then they can declare the results.

## II. LITERATURE SURVEY

1. Hanady Hussien, Hussien Aboelnaga, IEEE 2013. "Design of secured E-voting systems."

This paper aims a new e-voting system that fulfills the security requirements of e-voting. The system on an embedded system which serves as a voting machine. This also checks the condition of voteability.

2. Daniel petcu, Dan Alexandru stoichescu 2015. "A Hybrid mobile Biometric- based E- voting system." Information technology makes more simple all over the world .e-voting is hardly accepted as main tool in its field because it shortages in offering good solutions to common problems like fraud, bribery, anonymous character of the vote and absence of good independent monitoring.

3. Urmila Shrawankar Dr. Vilas Thakare, "techniques for feature extraction in speech recognition system" The time domain waveform of a speech signal carries all of the auditory information. From the phonological , point of view, very little can be said on the basis of the waveform itself. However, past research in mathematics, acoustics, and speech technology have provided many methods for converting data that can be considered as information if interpreted correctly. In order to find some statistically relevant information from incoming data, it is important to have mechanisms for reducing the information of each segment in the audio signal into a relatively small number of parameters, or features. These features should describe each segment in such a characteristic way that other similar segments can be grouped together by comparing their features. There are enormous interesting and exceptional ways to describe the speech signal in terms of parameters. Though, they all have their strengths and weaknesses, we have presented some of the most used methods with their importance.

### Existing System:

#### 1. Voting

The report are going to be a survey of the present status of Internet voting round the world. It is expected that virtually all the fabric necessary for this project are often found on the online . You should start out by studying various models of Internet voting to see what the architecture of such systems looks like. Then find elections during which Internet voting has actually been used and gauge their "success".

#### 2. Verification Without Paper Trails

Verifiability is actually a multi-part process. First, the voter must be assured that the machine has captured her vote correctly. Second, the voter must know that the vote was counted correctly. Third, the voter must be confident that the record that was created (for recounting) cannot be altered or invalidated and that it will still be in existence at the time of a recount. The so-called "voter-verified paper audit trail" (VVPAT) only accomplishes the first of the three functions and suffers from other drawbacks. The goal of this project is to determine whether any voter verification mechanism is possible that meets all three objectives and does not use paper.

#### 3. Code Hiding

An allegation made against DRE machines is that they can be tampered with undetectably, whether by an intruder, an election insider or even the manufacturer. The catastrophe scenario is that of centralized distribution of malware that enters a large number of machines and alters the result of a state-wide or national election without being noticed or detected and without leaving any evidence after the fact

### Alternative Voting Systems

A voting system must interact securely with the public in geographically dispersed locations. Instead of designing new systems for voting from the ground up, it might be possible to use existing secure infrastructures. Examples are the ATM network and

state lottery systems. (There are others). The purpose of this project is to investigate the feasibility of using such alternative systems for voting. You will need to develop a catalogue of secure infrastructures, then examine whether they are suitable for voting or could be made suitable, then discuss potential barriers to adoption (such as cost, cultural factors, etc.)

### 5. Voting Privacy Assessment

The objective of this project is to complete a survey of all major types of voting system types (punch card, optical scan, DRE) to determine possible ways in which voter privacy can be compromised, either inadvertently or deliberately. (Examples: fingerprints on optical scan ballots, discovery of randomization seeds in randomized audit trails, monitoring of radio emissions from machines, planting transmitters in the machine, hiding a wireless TV camera in the booth, malicious recording of votes in the machine, reel-to-reel paper trails.) You should also do a web search to learn of apparent bugs that resulted in a loss of voter privacy. The report should be as complete a review as you can generate, but care should be taken not to indulge in far-fetched speculation

## III. PROPOSED SYSTEM

The solution is said to be unique as we have decided to add several modules and also decided the safety measures of the secure vote placement. The voting security is guarded with AI proctor monitoring software which watch each and every movements of the voter and also the suspicious activities around the voter, if there are third party present nearer to screen and audio will also be recorded in background. OTP verification process is at the earlier stage and Image recognition is also used before the AI proctor is enabled after this process. The vote is recorded in the database and successful vote placed will be notified through SMS, there is also separate login for admin and results can be published by the election commission officer.

### System Architecture:

The proposed system contains 3 modules .Each module serves different criteria at the real time case scenario,

#### MOUDLE-LOGIN:

This model checks for the user's valid id and password to be entered and then log in , this module also checks if the ID is expired or not , because when the voted user tries to login the system will not allow the user and show the prompt message as already vote placed. After log in the user enter into the well built UI/UX design of the web-app.

#### MODULE-OTP:

This module looks into the ONE TIME PASSWORD(OTP) verification as a secret 6-digit PIN is sent to the voter's registered mobile number and verified , every time when user enter the wrong PIN the log-in will be terminated.

#### MODULE-IMAGE\_CLASSIFICATION:

This module asks the user to fit in the drawn box and take a snapshot , then the database will store the image and at the background level the image recognition will function and after successful verification the user will be sent into the next level of the AI system.

#### MODULE-AI\_PROCTOR: Artificial intelligence

proctor system notes the user activities until the vote button is pressed , PROCTOR WORKING METHOD:

- 1.Checks for any other person nearer to the user and count the person in the frame.
2. Tracks the eyeball movements of the user on the entire screen involvement of the screen.
3. Records the mouth movements to check whether the user is interacting with someone.
4. Detects other properties like phone, headphone, earphone connection.

5. Head rotation or moving the head positions from the fixed part of the webcam will also be noticed

Many researchers agree that blockchain can be a suitable mechanism for a decentralized e-voting system. In addition, the voting records held in these proposed systems are transparent for all voters and independent viewers. The e-voting systems should be applied to small regions first and then its scope should be extended. The internet and voting devices still have many security weaknesses. Performing electronic voting through secure and reliable internet will require significant security advances. If election happens online the man power will be limited and the cost of maintaining the voting booth will also be reduced. People with internet access can do it from their home and NRI people can vote from their respective locations. This project would definitely create a huge impact in market value because of there will be good development in our countries economic scale. conducting election at the rural areas or at government places will be difficult. Hence we wanted to give back peoples voting right to choose their leader to rule them. Cities will be highly benefited by this system and DIGITAL INDIA focus will also come to real world at one day then everyone will be benefited by our invention.

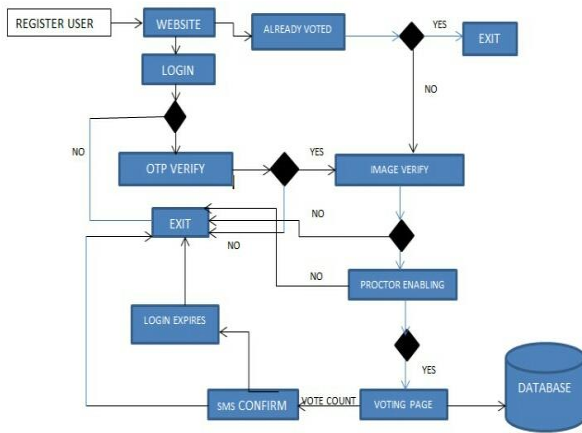


Figure 1. illustrates about Voter architecture

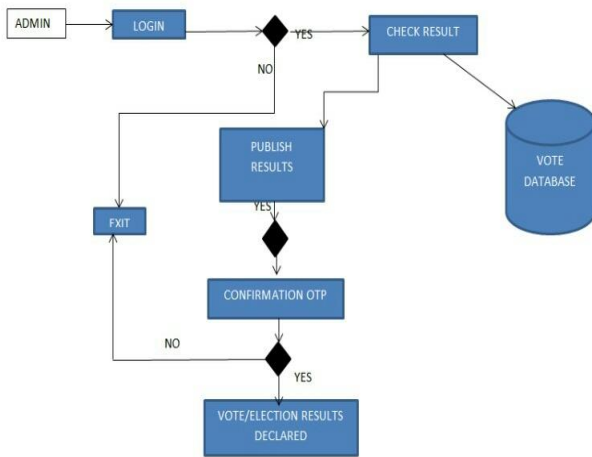


Figure 2. illustrates Admin architecture of our system

#### IV. FUTURE DEVELOPMENT

BlockChain will be implemented for data protection. Different database platform will be used. We are planning to implement this project as Real time election system.

This will also be useful for all proctor oriented services , like attending civil services exam online, neet online, and many other important government exams online.

#### V. CONCLUSION

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