# DIGITAL VOTING SYSTEM USING ML

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**ABSTRACT**

In this paper, a new authentication technique is discussed ie; facial recognition verification for online voting systems. In India, currently, there are two types of voting systems in practice. They are Secret Ballet paper and Electronic Voting Machines (EVM) But both of the processes have some limitations or demerits. In India online voting has not been implemented yet. The current voting system is not safeand secures too. The electorate wants to visit distinct locations like polling cubicles and stand in an extended queue to cast their vote, because of such reasons most of the people skip their chance of voting.The voter who isn't eligible also can forge their vote via faux way which can also additionally cause many problems. That's why in this project we have proposed a system or way for voting which is very effective or useful in voting. This system can also save money from the government which is spent in the election process. This project is being developed to help the staff of the election commission of India and also reduce human efforts. So, this new technique aims to develop a computerized voting system to make the election process more secure and user-friendly.

**KEYWORDS:** Authentication, Facial Recognition, Ballet Paper, Electronic Voting Machines, Haar-Cascade, Voters.

**INTRODUCTION**

Election plays a major role in such a huge republic country like India where the leader is elected by residents. Elections conserve an honest state functioning, as they provide residents the choice to select their government. So, the election ought to be an unfastened process. Every citizen of a democratic country has the right of voting with their own choice. Every citizen of a democratic country has the right of voting by his/her own choice. One of the elementary issues in the conventional self-governing framework is that it expends bunches of labor and resources. Also, some people can be worried about illegal publications of movement at some point in this manner of election or its preparation.

There are some drawbacks to the conventional election voting process which is being used in our country such as machines stopping working, chances of brutality, being time-consuming, resource-consuming, spot arranged, etc. Many people couldn't vote because the voter has to reach the poll boothsto vote or some people like those who are living far away from their birthplace where are allowed to vote. So, to get rid of their drawbacks, a new System is introduced i.e., Digital Voting System Using ML, which provides accuracy, security, flexibility, mobility, etc. Digital Voting System Using ML in aweb-based application to use in the election process. Primitively ballot paper technique was used in the election process. then comes the Electronic Voting Machine, which is easy to store the data and easily manageable. This is more secure than the ballot paper and less time-consuming.

Now, we proposed a voting system with biometric authentication to make the voting process more secure and reduce the time taken in the voting process. By the use of this, the voters can solidify their vote for their preferred candidate through the use of their systems. We use Face detection and Recognition Technology to authenticate of voters that he/she is the proper consumer or not. We provide

many modules in which the admin can log in withinside the tool and show the numerous operations. Users can log in to the system and use their right to vote. When the Voter uses the web application, the system will capture their image using a web camera & try to match it with the image stored in the database. If both images are the same, then the voter can cast their vote.

## LITERATURE SURVEY

This chapter contains this report's existing and established theories and research. This will give a context for the work that is to be done. This will explain the depth of the system: a literature survey representsa study of previously existing material on the topic of the report. This literature survey will logically explain this system.

### REFERENCE 1:

**Title**: "Electronic Voting Systems Equipped with Voter-Verified"

**Abstract:** In this paper, the authors report on their analysis and testing of one US state's criteria for direct-recording electronic voting machines equipped with voter-verified paper-record systems. The criteria and analysis cover various categories, including privacy, security, verification, integrity, functionality, and examination Direct recording electronic voting machine This type, which is abbreviated to DRE, integrates with a keyboard, touch screen, or buttons for the voter press to poll Some of them lay in voting records and counting the votes is very quickly. But the other DRE without keeping voting records are doubted about their accuracy

### REFERENCE 2:

**Title**: "Finger Print Base Electronic Voting System"

**Abstract:** The paper deals with the design and development of a Fingerprint Electronic Voting System. The suggested fingerprint voting system allows the user to scan his fingerprint, to check his eligibility by comparing his current fingerprint with the one already stored in the system's database, by the use of MATLAB using the Gabor algorithm. The Gabor algorithm shows a better result when compared with other algorithms that depend on the Minutiae technique because it combines local and global features. Once the users complete the identification process, they will be allowed to cast their vote using Biometrics.

### REFERENCE 3:

**Title**: "VOT-EL: Three Tier Secured State-Of-The-Art EVM Design Using Pragmatic Fingerprint Detection Annexed with NFC Enabled Voter -ID Card"

**Abstract:** Proposes a new state-of-the-art Electronic Voting Machine design in search of election legitimacy, to provide an inexpensive solution that is based on a pragmatic biometric system using fingerprint detection along with the inclusion of Near-Far Communication technology. NFC cards for the identification purpose of the voters, which is a short-range radio communication wireless technology. This technology allows communication between the NFC card and the device equipped with the reader when they are brought together within less than five centimeters apart in a very secure and reliable manner.

### REFERENCE 4:

**Title**: The title of the project is "Study on Security of Online Voting System Using Biometrics and Steganography"

**Abstract:** In this paper, we provide security to an online voting system with secure user authentication by providing biometric as well as password security to voter accounts. The basic idea behind this is to combine the secret key with the cover image based on the key image. As a result, a such new image is produced by a system called stego image which is quite the same as the cover image. The key image isa

biometric measure, such as a fingerprint image. The stego image is extracted on the server side to perform voter authentication. The system minimizes the risk factor as the hacker needs to find not only the template but also the secret key and it is not possible. It makes election procedure to be secure against a variety of fraudulent behaviors. To improve speed SHA 256 used for hashing is replaced with MD5

**PROPOSED SYSTEM**

The proposed system at the basic level collects all the information from the person who is trying to register for the online voting system. after the user is registered it allows for the next stage of verifications. The user should verify the voter card number and the user id with details. Once all the necessary information is gathered and compared with the existing information in the database the system will send the user to the page of face recognition, which is the main security level in the system. After completing all the security levels, the system will allow the candidate to cast the vote for the interested government party.

For face recognition, we used the Haar Cascade algorithm. In the Haar Cascade algorithm, the rectangular Haar features will be produced to detect various identities like white and black portions of a greyscale image. A rectangular frame will be created as a border that helps to crop only the face fromthe entire image. It is suitable to detect many faces in a given image. the preprocessing step converts the RGB image to a grayscale image. The black pixels were stored, and they were removed from the total number of white pixels. The output was referred with a threshold and if the features are similar and matched, then the objective like face will be detected.

When applying a set of features pre-trained to match particular characteristics of facial features, the correlation by which a certain feature matches the feature of an image can tell something about the existence or nonexistence of particular facial characteristics at a certain position.

**Stage 1:** Haar Feature Selection-

Haar features are evaluated in the subsections of the input image. The difference between the sum of pixel intensities of rectangular regions is calculated to separate the subsections of the image. a large number of Haar-like features are needed for obtaining facial features.

**Stage 2:** Creating an Integral Image-

too much computation will be done when operations are performed on all the pixels, so an integral image is used. that decreases the computation to only four pixels. This makes the algorithm fast.

**Stage 3:** Cascading Classifiers-

Using the applicable features to classify a face from a non-face but the algorithm gives another improvement using the concept of cascades of classifiers. Every field of the image is not a facial area, so it is not useful to apply all the features to all the fields of the image. Instead of using all the featuresat the same time, group the features into different stages of the classifier. Apply each stage one after one to find a facial region. If at any stage the classifier fails, that region will be discarded from further stages. the facial region will only pass all the stages of the classifier.
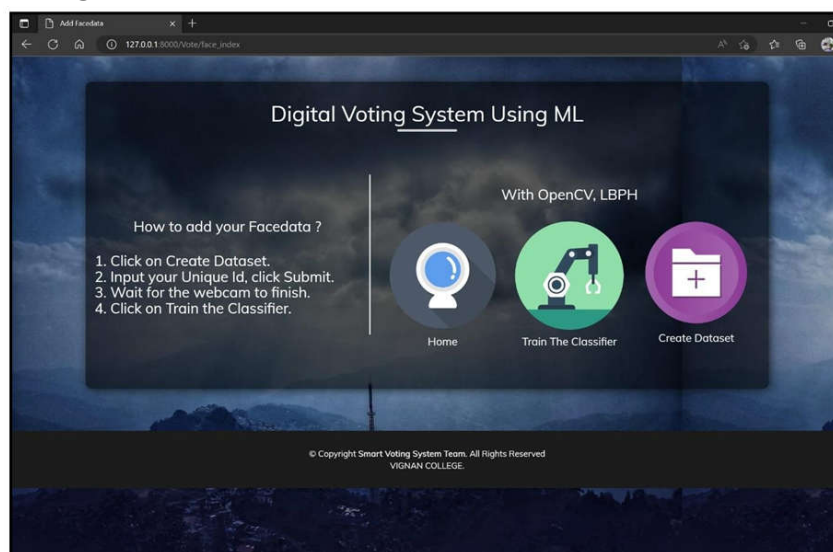
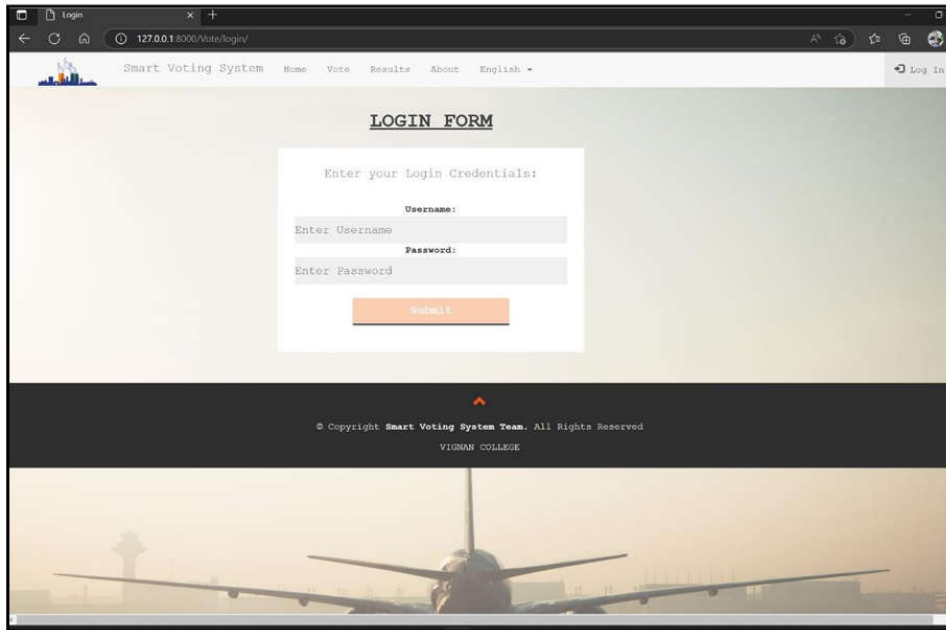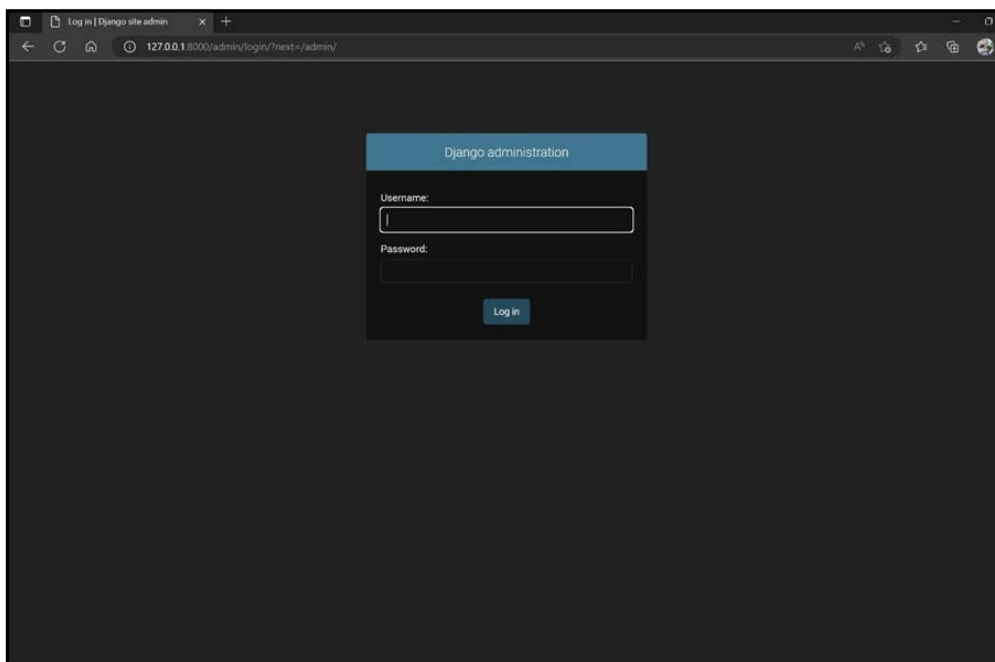**Flow chart:**
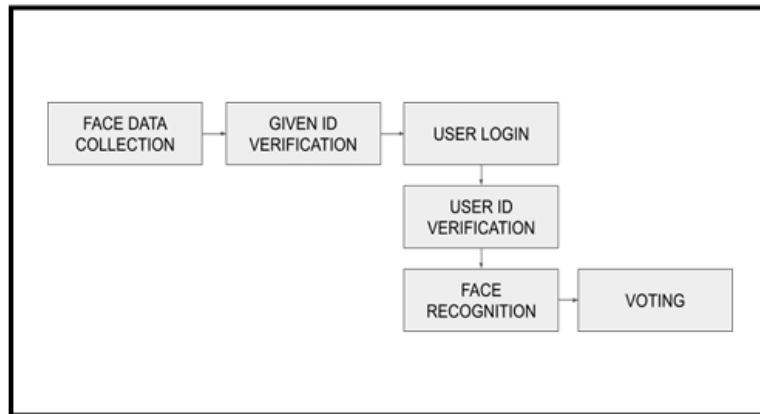


**RESULTS AND DISCUSSIONS**

**Home Page:**
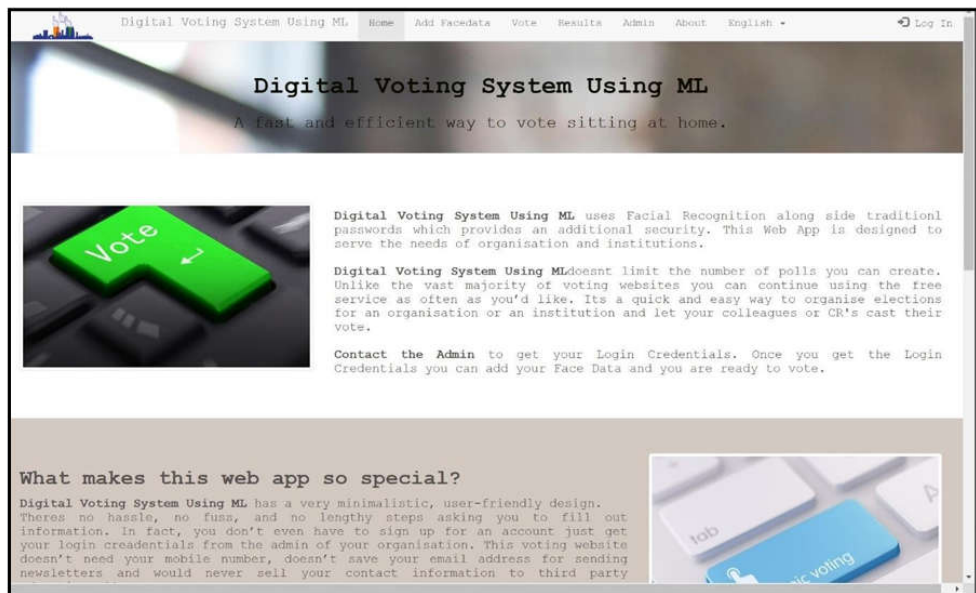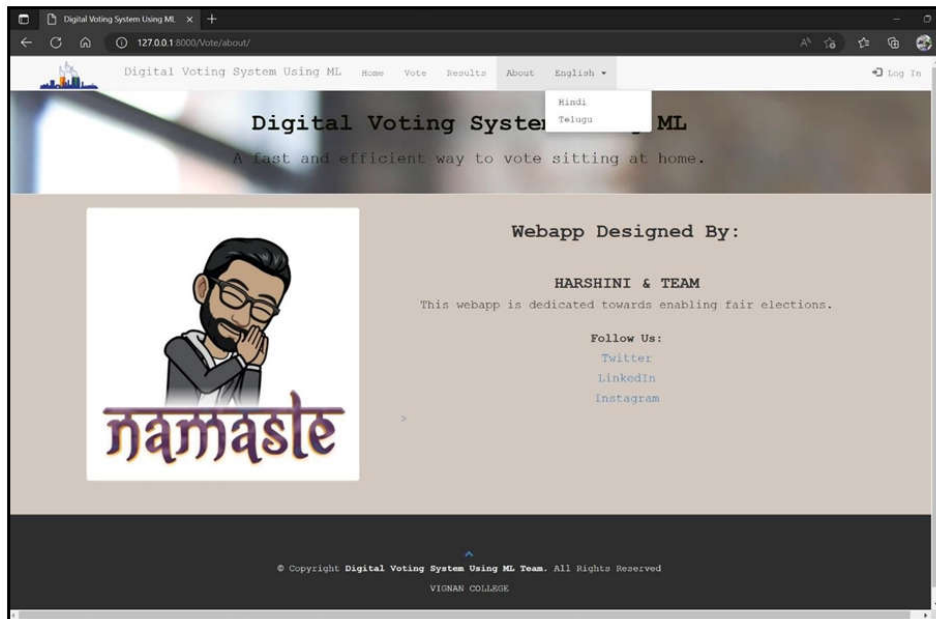


**Adding Face-data Page:**

**Voter Page:**



**Admin Page:**

**About Page:**



## CONCLUSION

The main objective is the development of an online voting system using a webcam as an authentication technique. Thus, security increases as there is an extra level of authentication. It will provide fearless and violence-free voting that will increase the percentage of voting for strengthening democracy.

Face recognition has been since it is coming a progressively secure and reliable type of confirmation by including this feature in the proposed voting system, could improve the capacities of the frameworkand can make it more secure and liberated from bogus voting. In this paper, one algorithm that is Haar Cascade is used to compare the faces and it is dependent on Haar features. The Face detection technique assists with expanding security and recognizing unauthenticated voters. The proposed framework is efficient by staying away from manual work and progressively securing through face detection.

## FUTURE SCOPE

Despite this project trying to cover all limitations related to authentication and security, theseare some of the few points where the scope of the project can be expanded -

1. In the future, we can make the entire election system with a 'Live Result Update'feature.
2. This system can also guarantee high-level secrecy, security, and verifiability of a marked ballot transmitted over the Internet.
3. This Online Voting System can be advanced to be used by any organization in the world for conducting smooth and fair elections.
4. This system can be added to the larger database.

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