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SMART VOTING USING FACE RECOGNITION

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ABSTRACT

There are currently two voting systems in India. Both electronic voting machines and secret ballot have advantages and disadvantages. Also, the current system is not secure. Many people lose the o pportunity to vote because they have to go to the polls and wait in line for hours. We propose votin g in this article. In our system, the voting process is divided into three security levels. The first lev el uses facial authentication, the second level uses an EID number for verification, and the third le vel uses one-time password (OTP) verification using the user's mobile phone number.

Keywords: IDE Spyder, Python, MySQL, voting system, facial recognition, OTP.

1. Introduction

Facial recognition technology is a type of biometric identification that uses the face to identify peo ple. It has been used in many applications such as security systems, authentication systems and ev en voting systems. Using facial recognition technology in voting can provide benefits such as grea ter accuracy, less fraud and better security. It will also eliminate the need for physical identificatio n, which is a significant benefit for individuals who do not have easy access to this information. H owever, it is worth noting that the use of facial recognition technology in voting brings with it som e concerns such as privacy and security. In some cases, facial recognition turned out to be inaccura te or biased; this can lead to misrepresentation and potentially biased voting. There is also a risk of information leakage that may affect the confidentiality of personal information. Therefore, it is im portant that all voting systems that use facial recognition are appropriately secured to prevent unau thorized access and protect sensitive data. The system also needs to be tested and reviewed regular ly to ensure it is accurate, fair and compliant with laws and regulations. In summary, while facial r ecognition can provide many advantages for elections, it is important to take into account the risks and implement the necessary security measures to protect personal privacy and ensure the integrit y of the voting process. Electronic voting equipment is available to speed up the counting of votes, reduce the cost of hiring people to count inperson votes, and improve access to voters. Costs will also decrease over time. The solution to the problem can be done in advance and the findings appe ar in real time. Computerized systems are used to order, address, return, sign and send ballots in an intelligent voting system known as online voting. Election data related to voting is usually recorde d, stored, processed and stored in the form of digital data. For this reason, it is important for voter verification and identity verification to be a more secure process in order to overcome user dissatis faction with the election software.

II. Way

It's good to hear someone propose smart voting that uses facial recognition and image processing t o improve security. Facial recognition is a popular biometric technology that helps identify people based on their faces. The proposed method uses the Haar cascade algorithm to extract and identify faces from images, which is a widely used method in face detection and recognition. It is based on

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machine learning techniques and involves training the distributor to find the product in the image. The method has been shown to be effective in identifying and identifying faces in photographs and videos. It is worth noting that the system will compare the captured image with the existing facial image database provided by the Electoral Commission to ensure that only voters are allowed to vo te. This method can help prevent voter fraud and increase the overall security of the system. Using Visual Studio, Python, HTML, and Django to build online platforms and use algorithms is a good choice because these technologies are widely used and have good support in the industry. This hel ps create a strong power and ability to control many voters. Overall, the implementation of smart v oting using facial recognition could be a good step towards increasing the security and transparenc y of the voting process. It is important to ensure that the system is properly tested and validated be fore deployment to ensure it is efficient and accurate.

SYSTEM ARCHITECTURE

MODELING AND ANALYSIS

3.1 Hardware Requirements

RAM: 8 GB

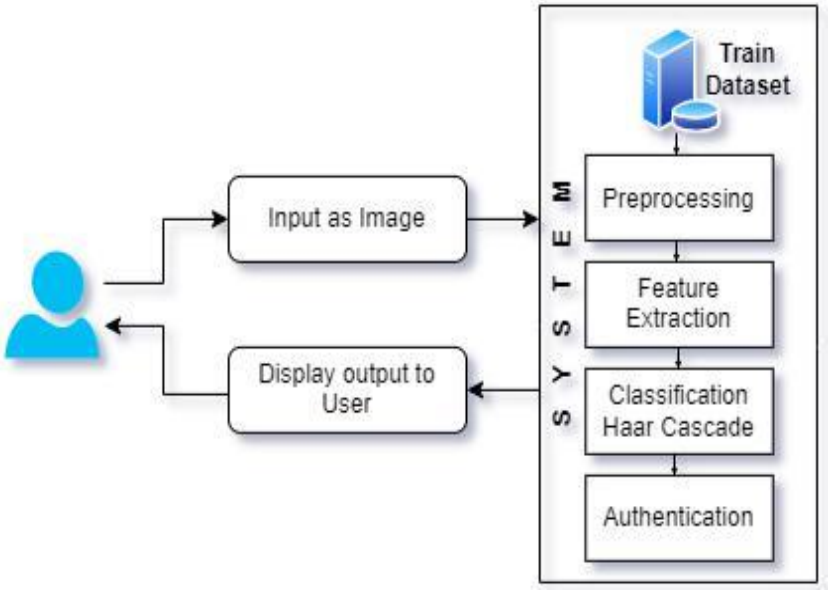
Hard Disk: 500 GB

Processor: Intel i5 Processor IDE

3.2 Software Requirements

IDE Spyder, MySQL, Python

FACE DETECTION USING HAAR CASCADE



It's nice to see the Haar Cascade method used for face detection in a smart survey. This method is a popular and effective target detection algorithm that can detect faces in photos or videos with hig h accuracy. There are several stages of facial recognition using the Haar Cascade method. First, th e input image is converted to grayscale to simplify the image and reduce computational complexit y. The algorithm then detects frame events called Haar features. This feature is calculated by calcu lating the difference in the amount of pixels used in adjacent areas of the image. In the next step, t he algorithm uses normal images to speed up the calculation of Haar features. A normal image is a twodimensional array that stores the number of pixels occupied by all pixels within a rectangle de fined by its left and right corners. The third stage involves training the classifier using the Adaboo st algorithm. This algorithm selects the best features that can distinguish human faces from non-faces. Finally, the algorithm uses a set of classifiers to classify the input image as a face or faces. A classifier stage is a series of stages with each stage containing more than one weak classifier. If t he input image fails to exceed a certain level, it is stopped immediately, which helps reduce the err or and improve the accuracy of the algorithm. Overall, the Haar Cascade method is a good face det ection method that will help identify the right voters in smart elections. It is important to make sur e the system is trained and able to use different techniques on positive and negative images to ensu re it performs well in real-world situations.

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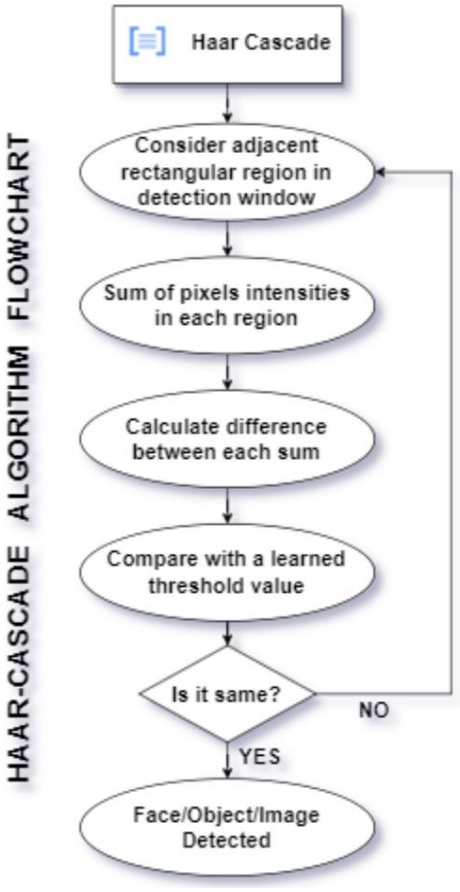
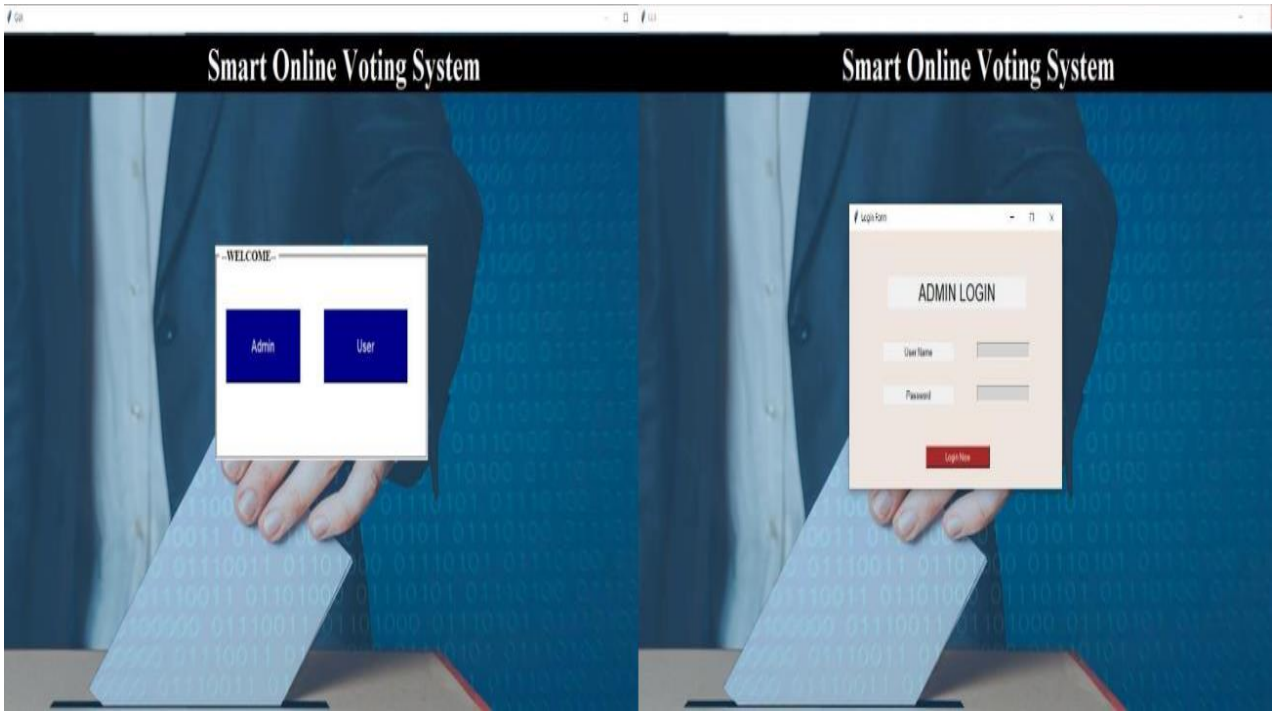
Vol 12, Issue 1, 2024



IV. RESULTS AND DISCUSSION

1. Home Page

2. Admin Login Page



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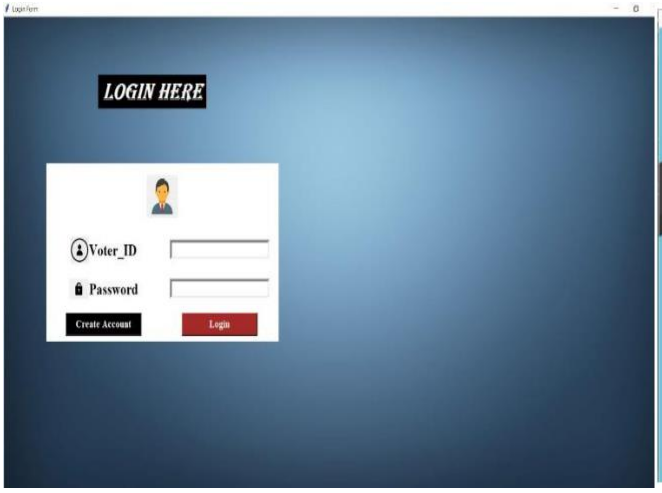
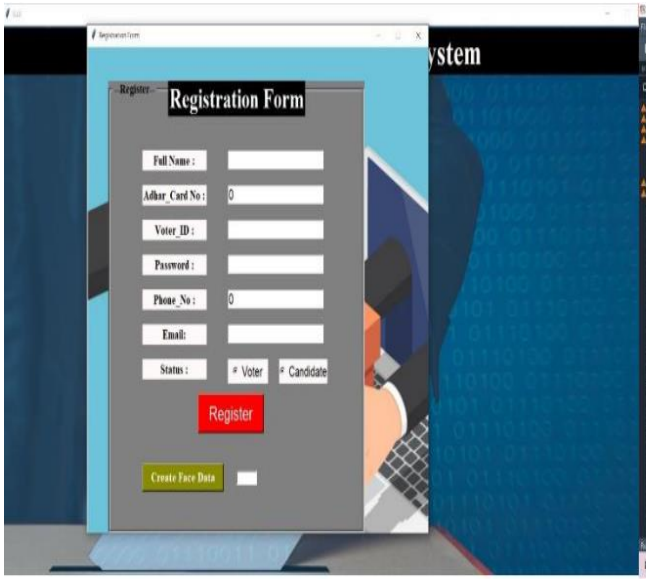
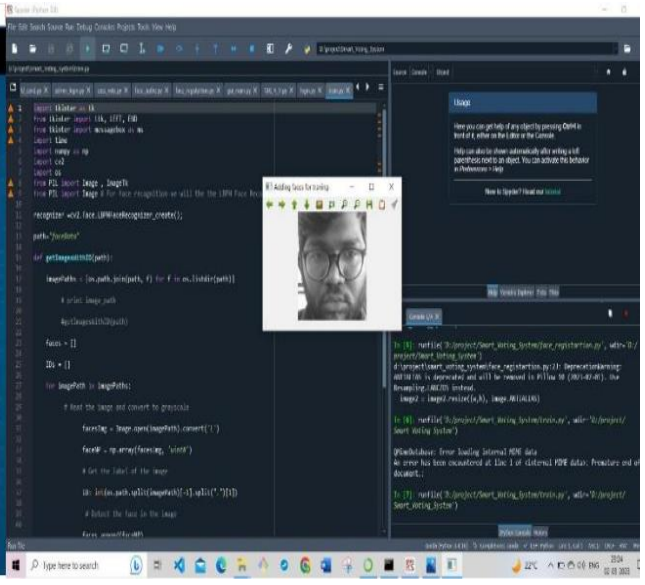
Vol 12, Issue 1, 2024



3. User Login Page

4. Candidate Form



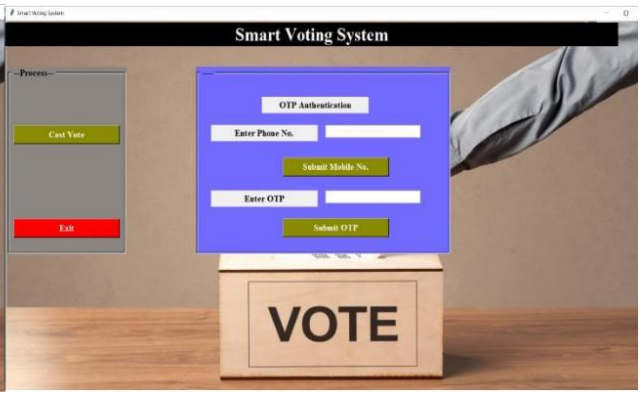


5. Voter Registration Page

6. Face Registration

ISSN2321-2152
www.ijmece .com
Vol 12, Issue 1, 2024

7. Cast Home Page



8. OTP & Face Authentication

9. Vote Casting

V. CONCLUSION

Our proposed system is a machine learning-based solution using facial recognition and one-time password (OTP) authentication that allows voters to register and vote from anywhere, regardless of their location. The system provides security protection and prevents people from voting more than once. It is a reliable and reliable system that provides ease of voting in remote areas and reduces the need for human resources and time-consuming procedures.

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