Bhoj Reddy Engineering College for Women

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Department of Electronics & Communication Engineering

Mini Project Abstract Review on

smart voting system using face recognition by MATLAB software

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Batch :C10

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INTRODUCTION

- The project aims in designing a smart voting system leveraging face recognition via MATLAB and deep learning CNN algorithms provides a modernized approach to authenticate voters and ensure secure and efficient elections .

- By utilizing advanced facial recognition technology, the system can accurately identify registered voters ,thereby minimizing the risk of fraudulent activities .

- The integration of deep learning CNN (Convolutional Neural Network) algorithm enhances the system’s ability to recognize faces accurately, even in varying lighting conditions and angles.

- This sophisticated voting system harnesses the power of MATLAB’S computational capabilities and deep learning CNN algorithms to revolutionize the electoral process.

- Through the utilization of facial recognition technology, voters can securely and conveniently cast their ballots without the need for physical identification documents.

EXISTING SYSTEM

- Manual voting : It is a traditional method of casting and counting votes in an election process.

  It typically involves the following steps:

  1. Casting votes
  2. Ballot collection
  3. counting votes
  4. verification and Reporting

  However it can be time consuming and susceptible to human error.

- Using basic ML algorithm: A voting system using a basic machine learning (ML) algorithm leverages ML techniques to enhance various aspects of the electoral process, such as fraud detection ,voter behaviour, prediction, and result analysis.

  By leveraging basic ML algorithms, voting systems can become more robust, transparent, and responsive to potential issues.

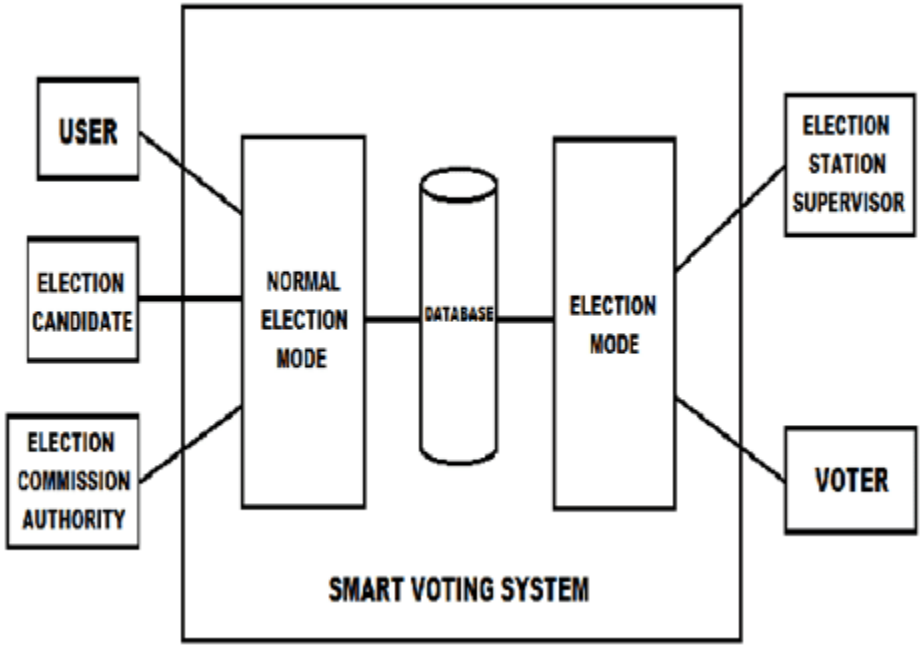
PROPOSED SYSTEM

- Using deep learning algorithm (CNN): Using a deep learning algorithm, specifically Convolutional Neural Networks (CNNs), in a voting system can provide sophisticated capabilities, particularly for tasks involving image or text data.
  Applications of CNN are:
  1. Ballot Image Processing
  2. Security and Fraud Detection
  3. Sentiment Analysis

  By implementing a CNN-based approach, voting systems can achieve high accuracy in tasks such as automated ballot counting and fraud detection, thereby enhancing the efficiency and integrity of the electoral process.

BLOCK DIAGRAM

Smart voting system through face recognition using MATLAB software:



- User: In smart voting system using face recognition, the user plays a critical role in ensuring the system's functionality and security.
  Benefits of user environment are Enhanced security, Streamlined process, User confidence.

- Election Candidate: In a smart voting system using face recognition, election candidates have specific roles and responsibilities to ensure the systems integrity, fairness, and transparency.

- Election commission Authority: Role of Election Commission Authority are System Oversight and Management, Regulatory Compliance, Voter education and Outreach, Monitoring and Oversight, Response to incidents and complaints.

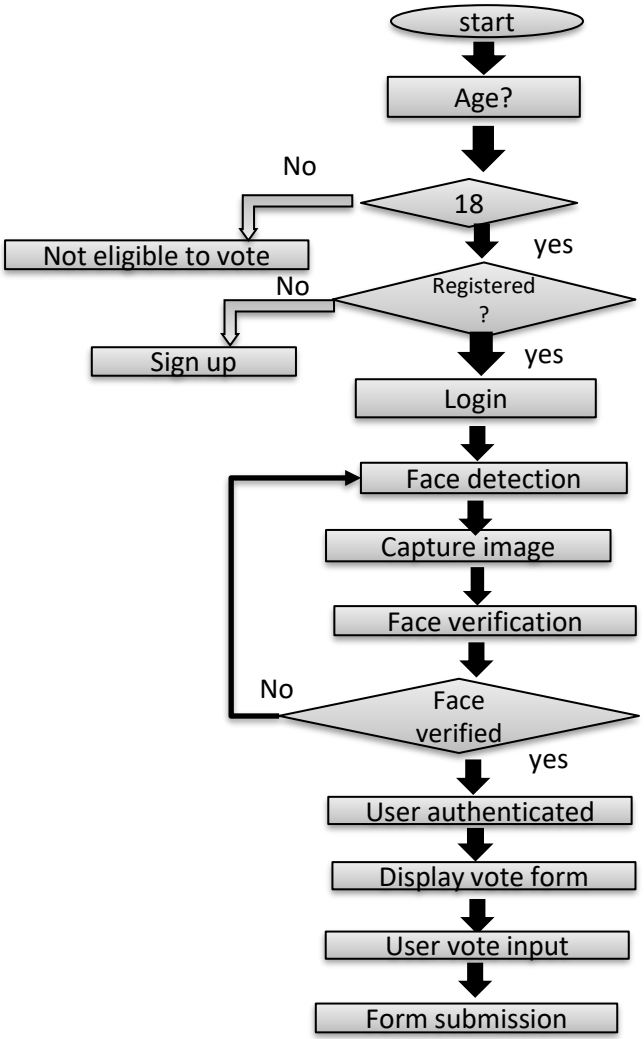
- Election mode: The election mode in a smart voting system using face recognition refers to the operational state of the system during an election event. It encompasses the setup, activation, and management of the voting process, specifically integrating face recognition technology for voter authentication and verification.

- Data base: the database plays a crucial role in storing and managing the voter information and facial data necessary for authentication and verification. Components of data base are Personal data, Facial data, Metadata.

- Election station supervisor: The role of the election station supervisor is crucial in ensuring the smooth operation, integrity, and security of the voting process.

- Voter: Role of voter is critical in ensuring the integrity and efficiency of the electoral process and the functions are Registration and verification, Authentication and Voting, Compliance and Integrity.

Flow chart


start
Age?
No
18
yes
Not eligible to vote
No
Registered ?
yes
Sign up
Login
Face detection
Capture image
Face verification
No
Face verified
yes
User authenticated
Display vote form
User vote input
Form submission

Components Required

Software requirements**:**

- operating system: windows
- MATLAB 2021a

Hardware requirements**:**

- input device: webcam

Advantages:

- Security
- Convenience
- Speed
- Efficient development
- Robust face recognition

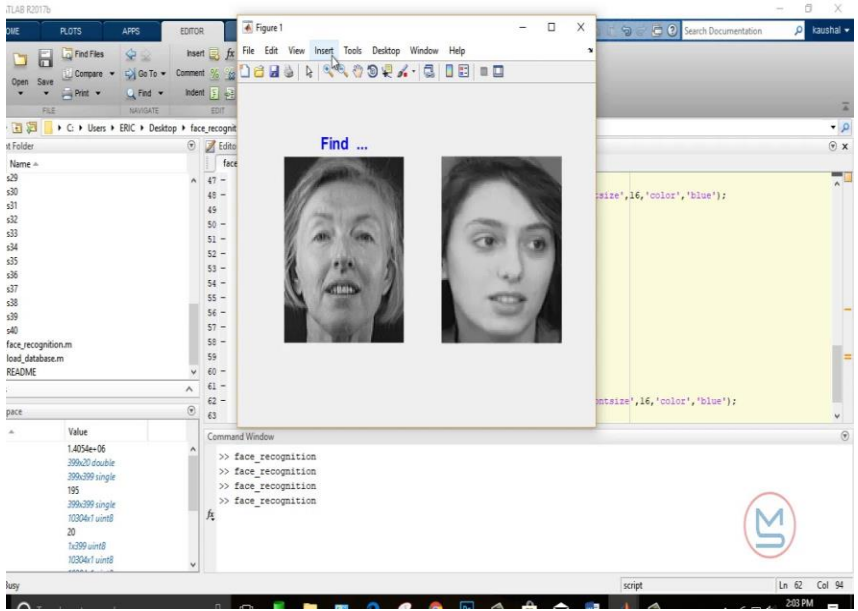
Disadvantages:

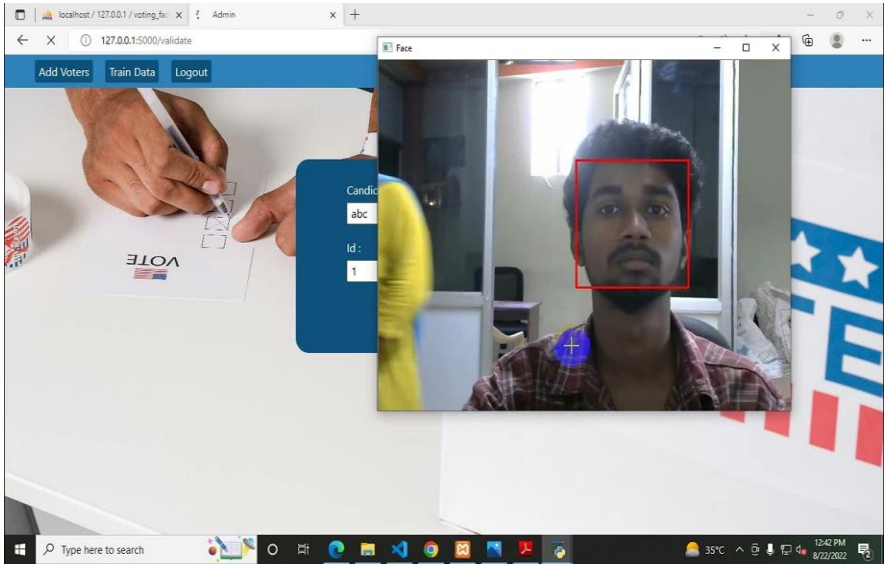
- Infrastructure cost
- Technical challenges

Applications:

- Secure Elections
- Efficient voter Authentication
- Accessible voting
- Real-time monitoring
- Remote voting

Expected result






Smart Voting System
Project Description
Vote Here
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Please register your vote below
Click to Vote:
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CONGRESS
JDS
OTHERS
Submit
Your vote has been registered. Thank you :)


DIGITAL VOTING
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conclusion

The implementation of a smart voting system using face recognition technology with MATLAB presents a cutting-edge solution to modernize and secure the electoral process. MATLAB's robust image processing and computer vision capabilities empower the development of highly accurate and efficient face recognition algorithms, ensuring swift and reliable voter authentication. By replacing traditional methods with automated face recognition, this system streamlines the voting process, reducing wait times and enhancing accessibility for all voter. Ultimately, the integration of face recognition technology with MATLAB heralds a new era of transparent, efficient, and trustworthy elections, bolstering public confidence in democratic institutions.

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ANY QUERIES?

THANK YOU