



PARSHWANATH CHARITABLE TRUST'S

**A.P. SHAH INSTITUTE OF TECHNOLOGY**

Department of Computer Science and Engineering  
Data Science



# **FaceVote Precision : A Swift & Accurate E-Voting Revolution**

**Ansh Rathod - 22107022**

**Atharva Thube - 22107062**

**Ayush Sharma - 22107028**

**Balkrishna Yadav - 22107050**

**Project Guide**  
**Prof. Vaibhav Yavalkar**

# Outline

- Introduction
- Literature Survey of the existing systems
- Limitations of the existing systems
- Problem statement
- System Design
- Technologies and methodologies
- Implementation
- Conclusion
- References

# Introduction

- FVP is a digital platform that enables to manage the elections easily and securely.
- The main intension is to speed the counting of ballots, reduce the cost of paying staff to count votes manually and can provide improved accessibility for disabled voters.
- It also intends to promote the civil rights of participants and the importance of voting.

# Introduction

## Motivation :

- Elections play a major role in the country usually elections follow the Traditional Paper based Voting or EVMs .
- Citizens has to move to the polling stations to cast their vote. It leads to gathering of people in large number.
- People at remote areas from their native places find difficult to reach their hometowns to cast vote due to various reasons .
- Aged or physically abled people cannot travel to polling stations and wait for longer time in queue to cast vote.
- In order to overcome all these issues ,we decided to find a solution and that is face vote precision(online voting system).

# Introduction

## Objectives :

- To develop online voting platform that ensures the authenticity of votes and voters through face recognition, utilizing the Haarcascade algorithm in the OpenCV library of Python.
- To optimize the voting process for enhanced accessibility and efficiency, thereby increasing voter participation solely through internet connectivity.
- To ensure the integrity of the voting process by preventing tampering of votes during counting by utilizing the NumPy library in Python.

# Literature Survey of the existing system

Sr No.	Title	Author	Year	Outcomes	Methodology	Conclusion
1	Online Voting System by Using Three Step Verification [1].	N. Sreenivasa, Gopal Agarwal, Rishab Jain Department of Computer Science and Engineering, Nitte Meenakshi Institute of Technology, Bangalore-560064, Karnataka, India. [ICAECT]	2023	This system incorporating three-step authentication mechanisms, including face recognition, Aadhar verification, and Voter ID verification. By leveraging these technologies, the system aims to streamline the voting process	The methodology employs a multi-tier authentication system comprising facial recognition using haarcascade algorithm, aadhar & voter id validation involves validating the provided number against the official website.	From this we have opted, face recognition using the Haar cascade algorithm to authenticate voters, ensuring the accuracy and security of the verification process.

# Literature Survey of the existing system

Sr No.	Title	Author	Year	Outcomes	Methodology	Conclusion
2	Smart voting[2].	Bhuvanapriya, Rozil banu, Sivapriya. Kalaiselvi.V.K.G. Department of Information Technology  Sri Sairam Engineering College (IEEE)	2017	This system aims to enhance the voting process in India by introducing a automated voting system that utilizes Aadhar card details and fingerprints for authentication. This system ensures voting by automatically generating voter IDs for individuals.	This system utilizes Aadhar card data to automatically generate voter IDs for eligible individuals Voters authenticate themselves using their ID, password, and fingerprint, ensuring security.	One drawback of using biometric verification, such as fingerprint scanning, is its limited availability, primarily confined to smartphones. Consequently, in our implementation, we have opted for voter ID verification instead of Aadhar ID, providing a more accessible login method.

# Literature Survey of the existing system

Sr No.	Title	Author	Year	Outcomes	Methodology	Conclusion
3.	Online Voting System for India Based on AADHAAR ID[3].	Himanshu Agarwal, G.N.Pandey Dept. of Software Engineering Indian Institute of Information Technology, Allahabad (IEEE)	2013	The paper proposes an online voting system for India based on Aadhaar ID authentication, enhancing security and enabling voters to verify their votes' accuracy.	The methodology involves uploading voter information, including Aadhaar ID, to database of the Election Commission of India, followed by verification of votes by cross-checking with the main database, ultimately leading to the immediate declaration of results.	The paper presents a secure and efficient online voting system for India, leveraging Aadhaar ID authentication to prevent manipulation and ensure transparency. With the proposed framework, it aims to enhance the reliability and integrity of the existing electoral process.



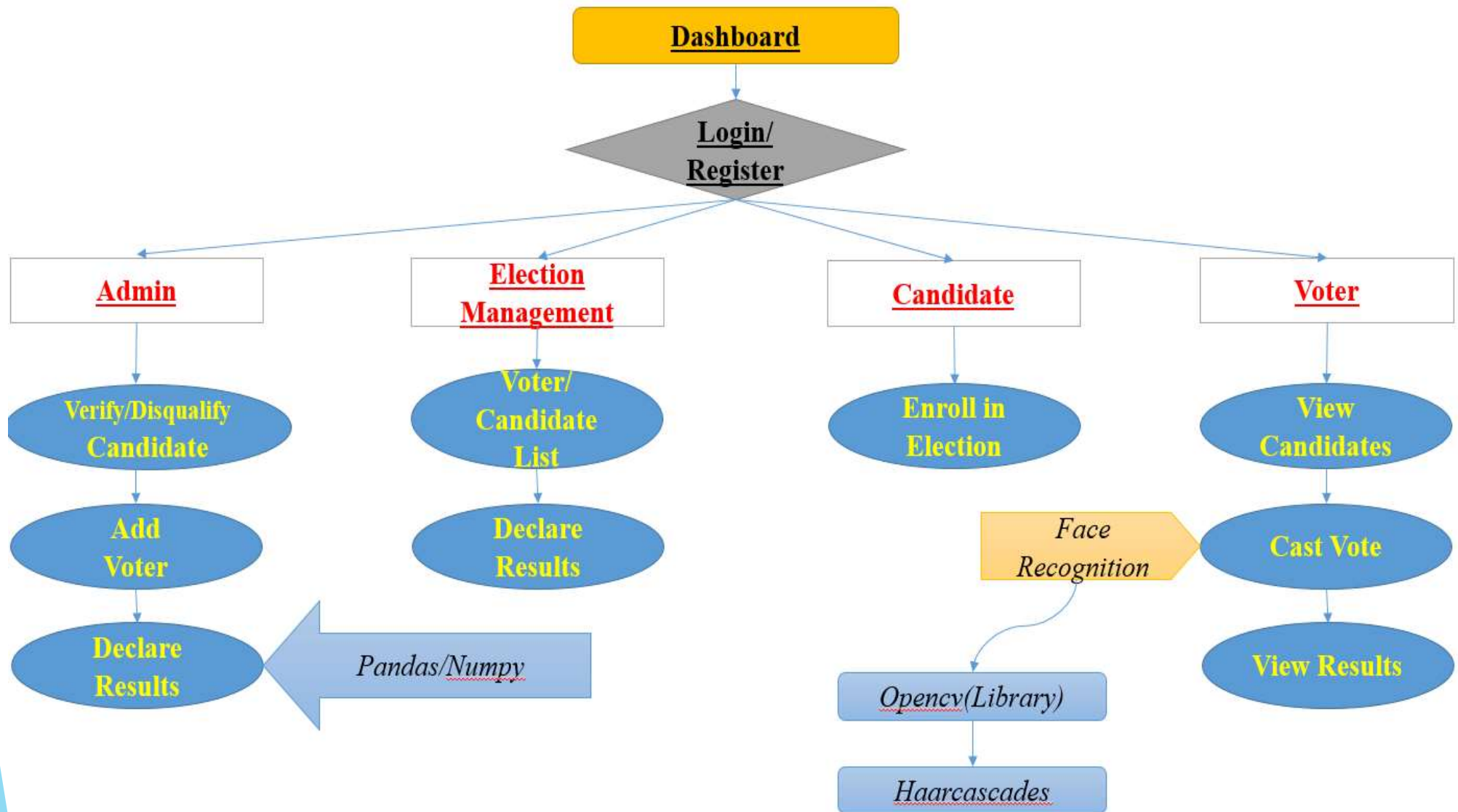
# Limitations of existing systems

- Paper ballot voting systems are susceptible to human error, such as miscounting or mishandling of ballots, they can be time-consuming to tally and verify, potentially delaying election results and paper ballots can be tampered.
- The electoral voting system presents challenges including long queues, limited polling locations, voter suppression, and the potential for tampering with electronic voting machines (EVMs).
- Most of current online voting systems is relied on biometric fingerprint scanning for voter authentication, which may exclude individuals without access to devices supporting this technology.

# Problem statement

- The current electoral voting system faces challenges such as low voter turnout, political meddling and security concerns.
- The existing online voting system faces limitations in securely verifying voter identities and ensuring accurate vote counting, undermining the integrity and reliability of the electoral process.
- To address the challenges faced by both traditional and online voting systems our aim is to build a system using python's opencv for face recognition to authenticate voters and NumPy for secure vote counting enhancing accessibility and integrity and also to leverage the internet connectivity to increase voter turnout significantly.

# System Design



# Technologies and methodologies

- Frontend GUI:  
Python 3.11 and 3.12 for Tkinter
- Backend:  
MySQL workbench 8.0

# Implementation

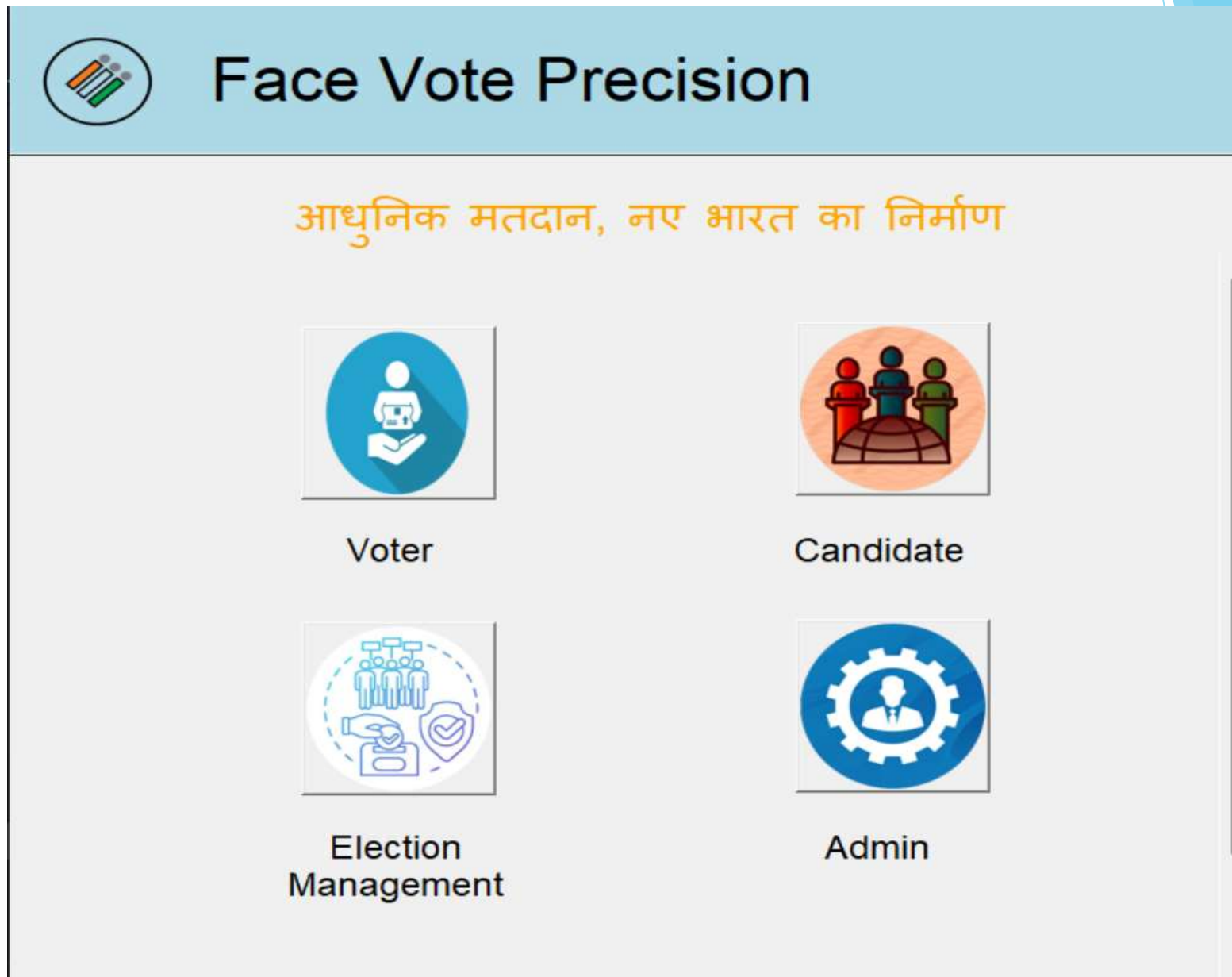




Fig 1.1 Dashboard

# Implementation

 Face Vote Precision [Back](#)

**Register Here !!**

For Registration Scan your Face

 **Scan Your face**

Note : ' To initiate the voter registration process,it is mandatory to undergo facial scanning to authenticate the user's identity.'

Fig 1.2 Voter Registration



# Implementation

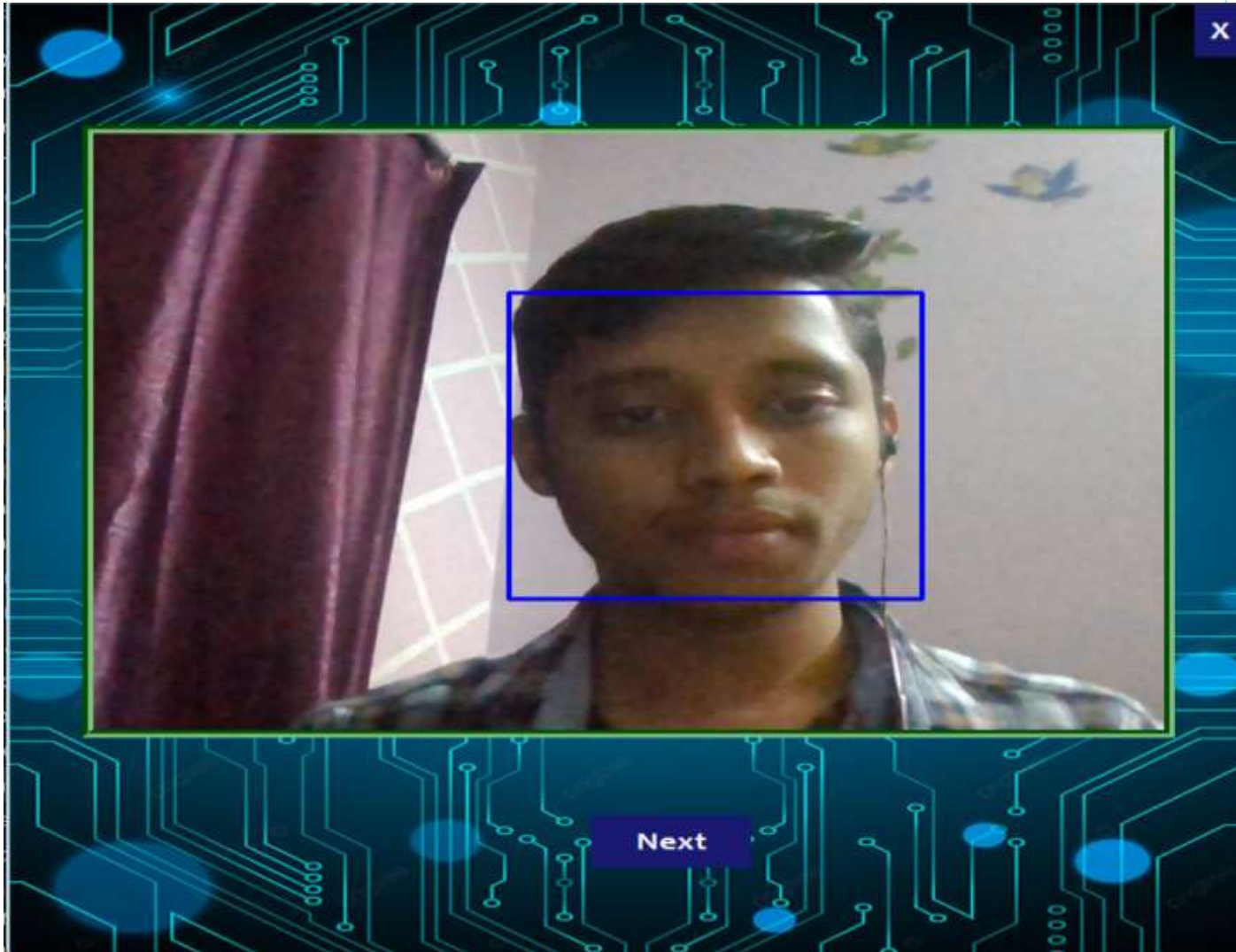


Fig 1.3 Face Recognition

# Implementation

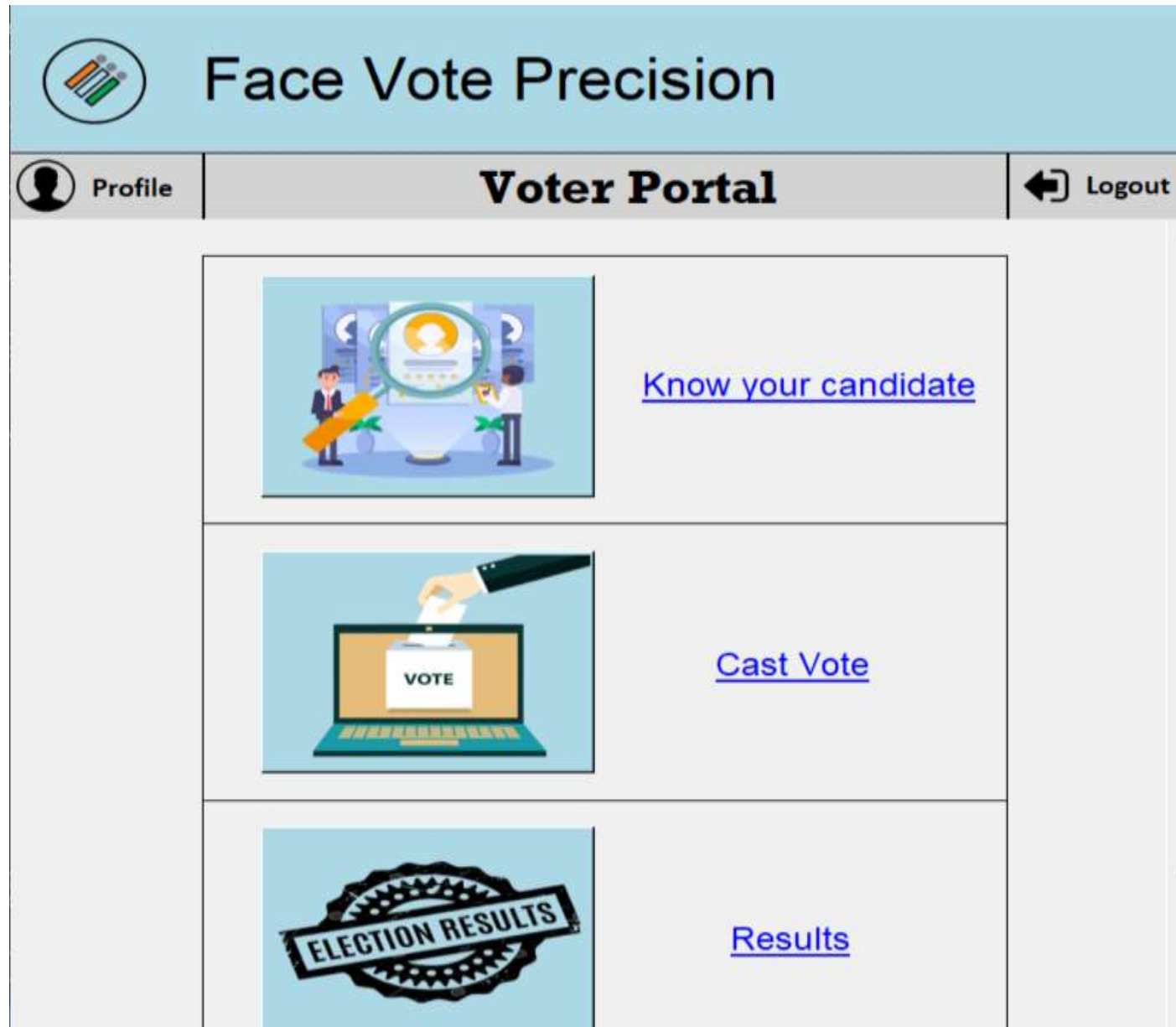


Fig 1.4 Voter Portal



# Implementation

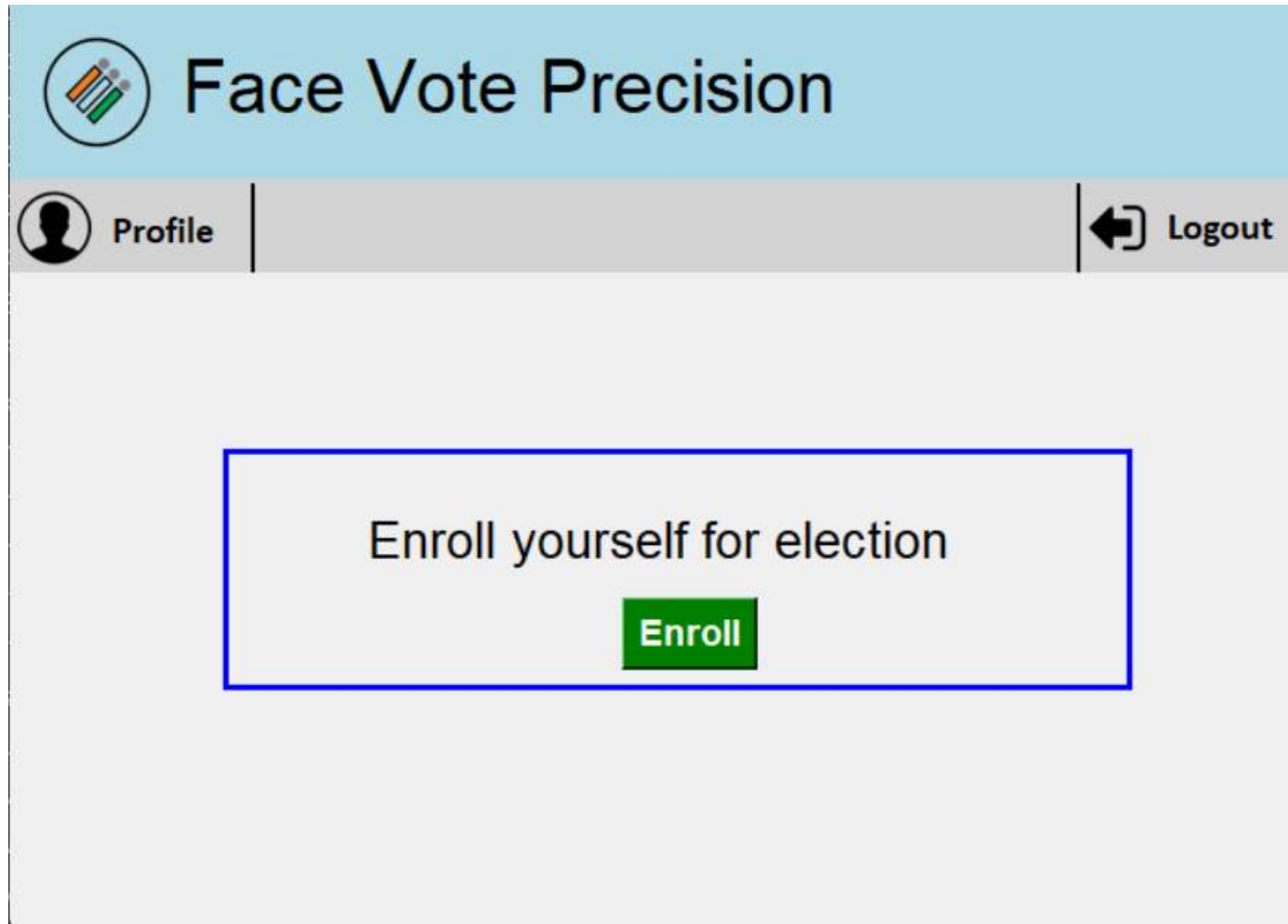


Fig 1.5 Candidate Enrollment

# Implementation

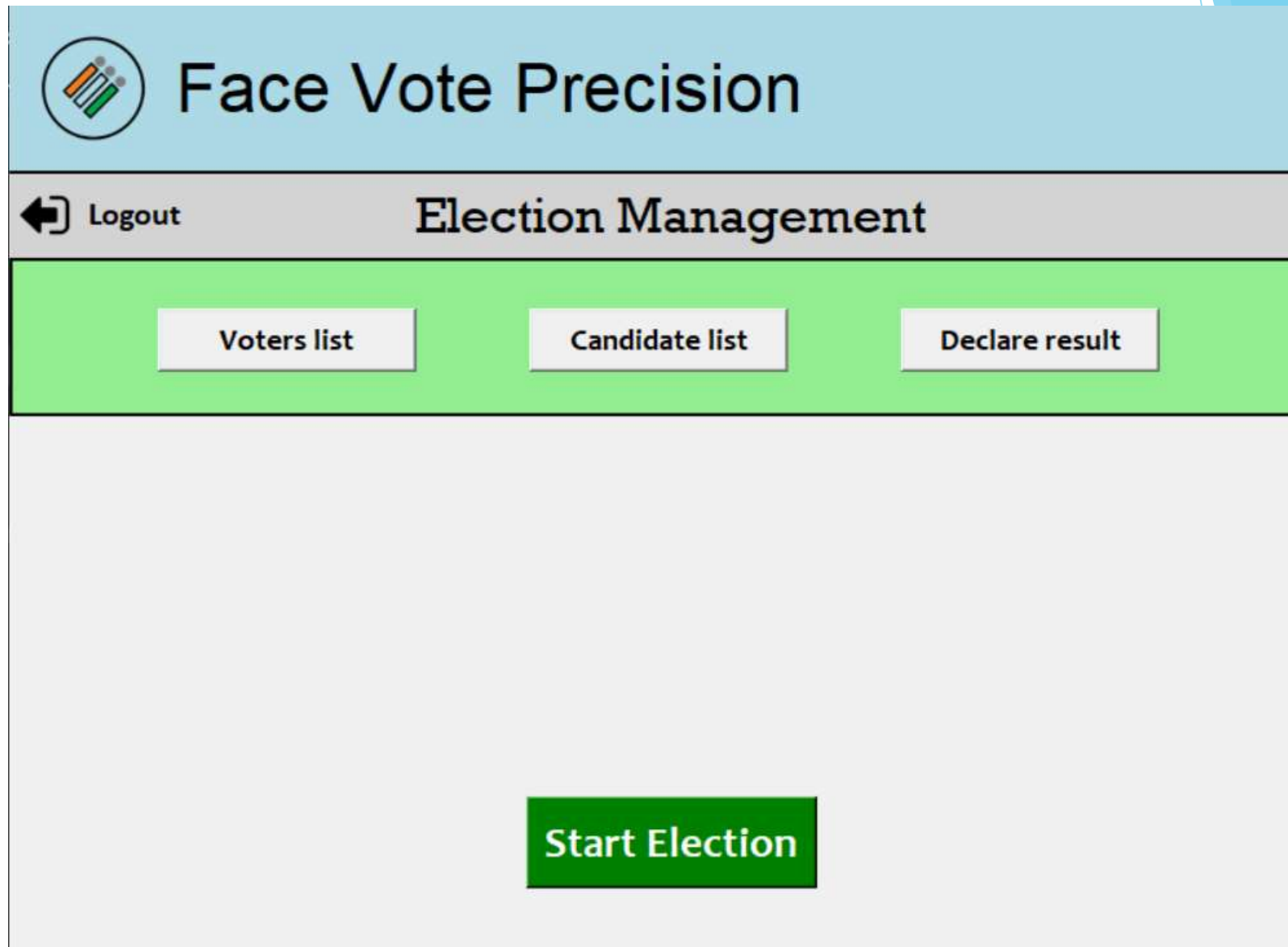


Fig 1.6 Election Management Dashboard

# Implementation

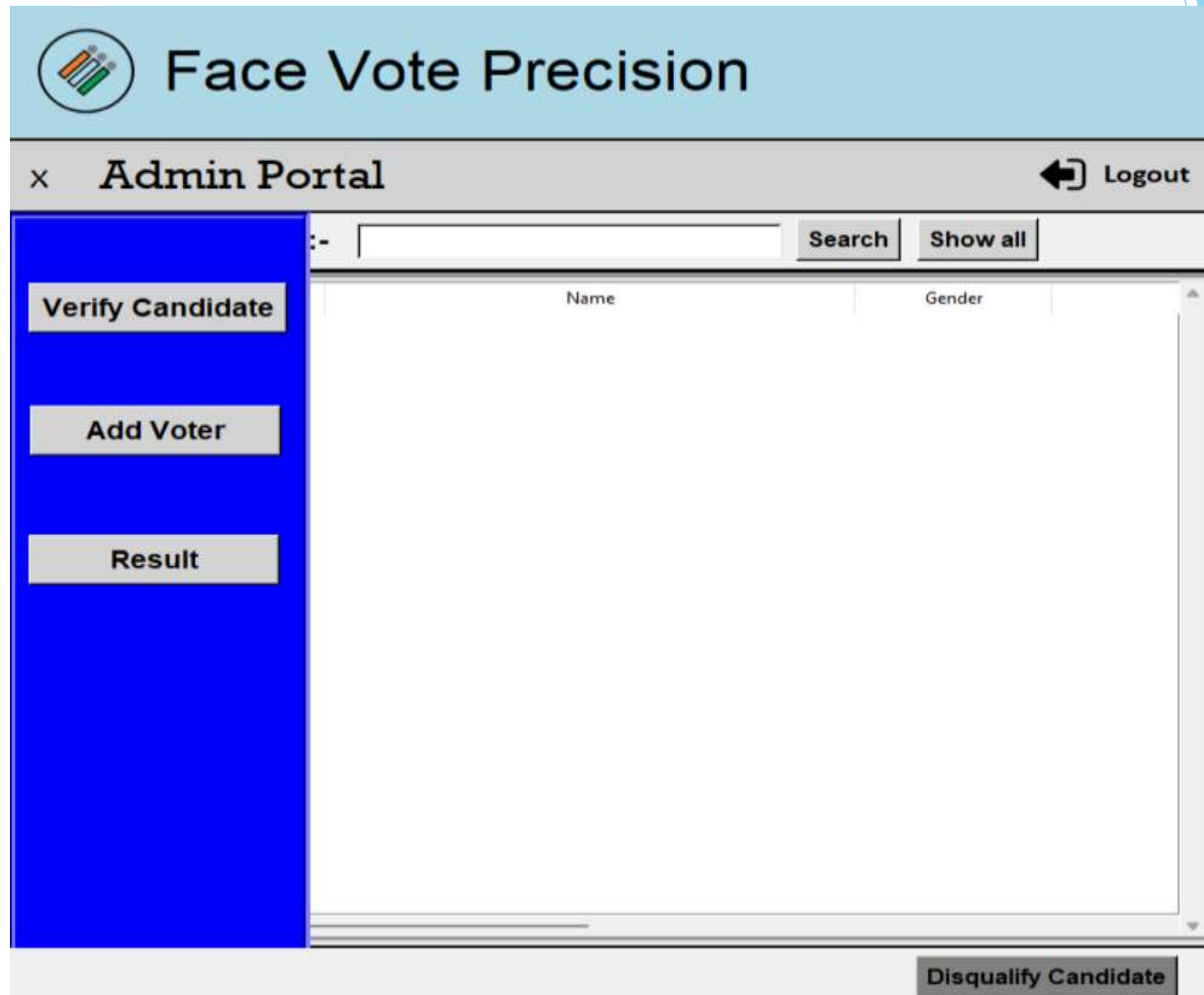


Fig 1.7 Admin Dashboard

# Conclusion

- The proposed method is to develop a secure internet voting system based on face recognition which tried to overcome all the drawback occurs in traditional or current voting system. The proposed system has many strong features.
- For this system no requirement of paper ballot or any electronic voting machine only the internet connection and device with camera is required and one can vote from anywhere securely.

# References

[1] Online Voting System by Using Three Step Verification N. Sreenivasa, Gopal Agarwal, Rishab Jain Department of Computer Science and Engineering, Nitte Meenakshi Institute of Technology, 2023 [ICAECT].

[2]Smart voting Bhuvanapriya, Rozil banu, Sivapriya. Kalaiselvi.V.K.G. Department of Information Technology Sri Sairam Engineering College , 2020 (IEEE).

[3]Online Voting System for India Based on AADHAAR ID Himanshu Agarwal, G.N.Pandey Dept. of Software Engineering Indian Institute of Information Technology, Allahabad 2013 (IEEE).

**Thank You...!!**