NOVEL VOTING SYSTEM USING MULTI MODAL BIOMETRICS

Dr. Dinesh Kumar D.S[1], Chitra P[2], Kavya L[3], Krupa M.G[4], Siri Mahesh[5]

[1-5]Department of Telecommunication Engineering, K.S. Institute of Technology, Bangalore, India

Abstract: In a democratic country like India, every citizen over the age of 18 has the right to vote for their leaders. When a person reaches the age of 18, he or she has the legal right to freely enroll in the Indian Election Commission's voter registration system (IEC). Voter ID is only used for voting once every five years or as needed, and voter cards do not give any government services such as Aadhaar. Citizens fail to register   for a voter card, and even if they do, voters may fail to vote because they live in a different location, which is far away from their home, and they are unwilling to go such a long distance. To ensure that every citizen has the opportunity to vote in a construction election, The greatest answer is to use Aadhaar and a web-based voting system that uses fingerprint recognition technology.

Key Phrases: Face Recognition, Fingerprint Module.

I. INTRODUCTION

Elections are the foundation of any democracy, and citizens electing their own government embodies the genuine essence of democracy. However, the current way of conducting elections in our country has weaknesses and loopholes that candidates and political parties take advantage of. The current system has numerous faults, including the possibility of duplicate votes, rigging EVMs, and faking the count, all of which tamper with democracy's basic essence. Electronic machines are utilised in most locations to conduct elections, which is time-consuming, energy-intensive, and should be done at a specific site. The Smart voting method, which uses facial recognition, will benefit people who do not live in the same region, the elderly, or those who cannot wait in long lines. In this online voting system, the Haar Cascade Algorithm is employed to recognise voter faces through image processing. CNN Deep learning is used to match a fingerprint image. Thanks to CNN, the processing time for the massive image was halved. It takes a long time to complete the ANN training. CNN is split into two halves. In the future, image detection and categorization will be possible. Face and fingerprint photographs have their attributes measured and compared to a database. When everything is the same. The voter will be able to cast his or her ballot. During an election, voters have the option of voting for any candidate. The additional leader slots will be disabled after that. The votes are saved on a server, and the counting is finished after the election is over effective in comparison to current methods. In addition, if the website is properly secured, very little staff will be required. Existing systems, as well as being an authentic model.

II. PROBLEM STATEMENT

To address the aforementioned concerns, we present a voting technique that is more secure, saves time, and enables two layers of electronic voter identification based on fingerprint pattern recognition. If the fingerprint properties of any individual are universally unique. We offer a voting mechanism that is more secure, saves time, and provides two layers of electronic verification based on individual fingerprint pattern recognition to address the aforementioned shortcomings. The new method will use the voter's fingerprint as authentication, which means that if the voter's scanned fingerprint matches the one stored in the system, he will be permitted to vote; otherwise, he would be denied and labelled a false voter and lawbreaker. Fingerprints, iris, gaits, voice, and other unique fingerprint characterizes.

III. LITERATURE SURVEY

This paper shows that, at least among politicians, there is a strong case for transitioning to distant internet voting. Increase voter confidence and turnout in order to make voting more convenient for voters. It promises more convenience and efficiency by letting voters to vote from any polling station, with a rapid and precise counting process. A fraudulent voter can cast a significant number of ballots since most electronic voting machines in the country lack a way for voters to validate their identities before casting a vote. Thanks to considerable US federal funds currently available to replace antiquated punch-card and mechanical voting systems, municipalities and states across the United States are embracing paperless electronic voting systems from a range of manufacturers. Because voters may simply programme their own

smart cards to stimulate the behaviour of wallets smart cards used in the election, production, and distribution, electronic voting devices can be interfered with during the election.

This paper discusses The technology acceptance model (TAM) was used in the study, along with several modifications. According to the literature, E-voting refers to the ease with which computers can be used to vote in an election. It aims to increase accessibility for disabled voters while also speeding up the counting of ballots and lowering the expense of employing workers to manually count votes.. When competing on the variance not all variable will survive significance ,and that is a result false competing on the same variance.

This paper discusses The European Union and Electronic Voting looks into one of the most recent prospective changes in 'Technology of Democracy': electronic voting. It investigates how e-voting may affect traditional democratic participation systems. From a practical and legal standpoint, the solutions may indeed serve to raise citizens' interest in voting. Voters frequently remark that the existing system is overly staged and manipulated, and that the parties all sound alike.

This paper discuss that it includes a novel authentication methodology in the online voting system that uses the voter's face recognition. Because we need an effective method to identify false voters during voting, the facial authentication procedure is utilised to detect the appropriate person while also making the system more secure.

IV. METHODOLOGY

With the use of whatever device they are using to access the website, such as a laptop, PC, or their mobile camera, the voter's face and fingerprints will be taken. The server will then get the captured image. The server searches through all of the photographs in the database for a match in the ones that have been registered. If the voter's face and fingerprints match, the election commission will register and identify him or her, allowing them to vote.

The Haar Cascade method is used to detect faces. If no match is detected, the page will state that the voter is not recognised and that they will not be able to vote. When the fingerprint pictures are saved in the server, the fingerprint image is saved in the server. Prefer from the list of voter options displayed.

When people choose a political party, they are unable to modify it, and the other options are also disabled. The server accepts and saves the votes of verified voters. The number of votes cast for each political party's candidates will also be recorded. Even vote counting is simplified in this manner, and the mission, candidates, and voters do not have to wait days for the results.
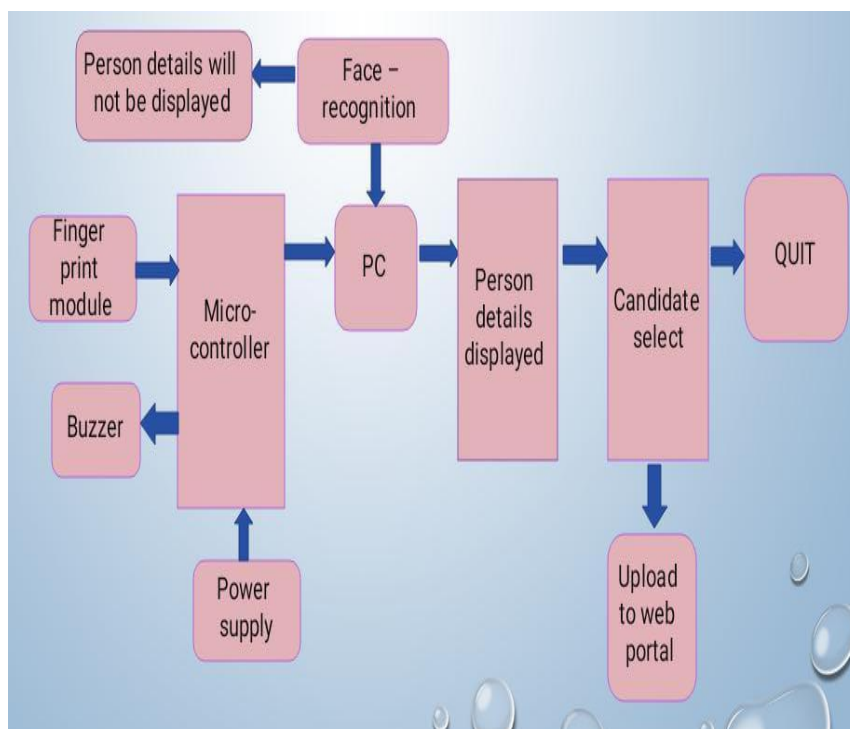
V. IMPLEMENTATION DIAGRAM

Fig 1: Block Diagram of Novel Voting System

VI. WORKING OF BLOCK DIAGRAM

A sensor recognises fingerprints and stores them in a database. when the server sends the message and displays it on the LCD, the voter's identification is validated. The LCD displays "not eligible" if no matches are found. Individuals above the age of 18 will have their data pulled from the database using their Aadhar cards.

In the first phase, voters will get an Id and password via their registered email address before to voting.

In the second phase, the voter's identification is validated using fingerprint data. The window that goes through each stage is the required face region. Cascade is employed in order to save time, energy, and effort at all stages. Only the face feature will be detected by the window.
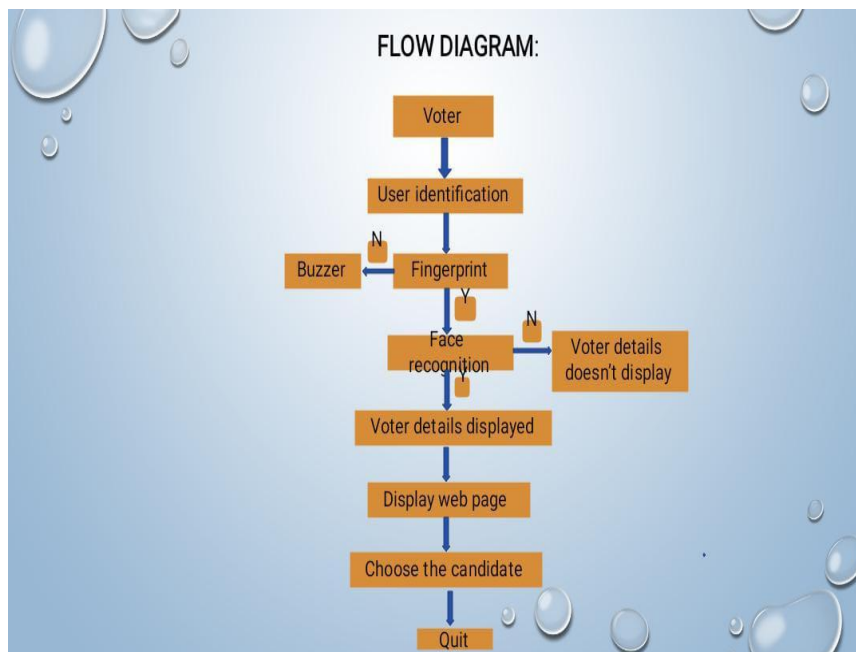
VII. FLOW CHART

Fig 2: Flow Chart describing the functionality of the system Where it involves fingerprint and face recognition for verification

VIII. CONCLUSION

The proposed solution is to develop a secure internet voting system based on face recognition that addresses all of the present voting system weaknesses. The suggested system offers a number of strong characteristics, including accuracy, verifiability, and ease. With this approach, no election officer, paper ballots, or electronic voting equipment are necessary all that is needed is an internet connection and facial scanners to vote securely from anywhere. The suggested system involves two authentication phases. The first is through finger print recognition, while the second is through face recognition. No voter will be allowed to vote again under this system since their face patterns will be linked to their Aadhar card.

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