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Online Voting Using Face Recognitions and OTP Verification

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Abstract: *In the digital era where hacking and by passing a system is easy, tampering of data is always possible leading to bad situations. Face Recognition is used to store data which is near impossible to change or tamper with as it is very secure in nature. Voting as a process in any nation is an essential event and if votes get miscalculated by any external source it will be harmful. To avoid such kinds of situations and making it more comfortable Face Recognition technology comes in acknowledgment. This paper proposes a decentralized national e-voting system based on Face Recognition technology. It includes an admin panel to schedule the voting, manage candidates and declare the results. The web application will provide the users with an interface to enter their Aadhar card ID (text input) and a photo of themselves at the time of voting. The eligibility of the voter will be checked at the time they enter their Aadhar card ID. Eligible voter's phone numbers will be verified via One Time Password (OTP). After voter verification, individual voters will be considered eligible for voting. During voting, voters will be monitored through a webcam/front camera. The votes will be stored in a Face Recognition and any tampering would be detected easily. The address and the corresponding constituency will be checked in the backend. Voting results will be declared on a specified date and will be handled by the admin. The results will be displayed graphically with various options to choose from and will also include past results and statistics*

Keywords: Voting, OTP, Face Authetication, Security

I. INTRODUCTION

In a manual, paper-based election, the electorates cast their votes to select their candidates, where they simply deposit their designated ballots in sealed boxes distributed across the electoral circuits around a given country. By the end of the election period, all these boxes are officially opened and votes counted manually in the presence of certified representatives of all the candidates until the numbers are compiled. This process warrants transparency at vote casting time as well as at counting time. Often times, however, counting errors take place, and in some cases, voters find ways to vote more than once, introducing irregularities in the final count results, which could, in rare cases, require a repeat of the election process altogether! Moreover, in some countries, purposely introduced manipulations of the electoral votes take place to distort the results of an election in favor of certain candidates. Here, all such mishaps can be avoided with a properly scrutinized election process; but when the electoral votes are too large, errors can still occur. Quite often international monitoring bodies are required to monitor elections in certain countries.

This naturally calls for a fully automated online computerized election process. In addition to overcoming commonly encountered election pitfalls, electoral vote counts are done in real time that by the end of elections day, the results are automatically out [1, 2]. The election process can be easily enhanced with various features based on the demand and requirements of different countries around the world. Due to worldwide advancements in computer and telecommunication technologies and the underlying infrastructures, online voting or e-Voting is no longer a North American or Western phenomenon. This high tech method of casting a ballot has spread far beyond the United States, expanding throughout the entire world.

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II. RELATED WORK

A world-wide database for all candidates and voters who have registered is kept on the server side. The server also offers backend data for the whole election process and operates in realtime [1].

The system is described in the work by, and it makes use of the camera system on mobile devices. A user may identify the system using a facial recognition system [2].

The two-factor authentication technology increases voting process security and lessens the likelihood of a rigged election [3].

There are two tiers of authentication mechanisms used to attain a better level of security. A Face Detection and Recognition system is the first authentication method employed. 2. Achieves a detection rate of over 66% (covering more than 94% of misbehavior) with less than 0.3% false positives[4].

Transformational digitalization should be used to verify actions and aspects [3]. However, conventional voting procedures, such as voting on paper, are still used in Iraq [5].

Transformational digitalization should be used to verify actions and aspects [3]. However, conventional voting procedures, such as voting on paper, are still used in Iraq [6].

The photos will be kept on the server or database. The photographs will be verified with the database when they are collected on voting day, ensuring a secure vote on election day [7].

It comprises of a comparison of various facial recognition algorithms of different kinds. Our comprehensive research's major result is found in Section [8].

The new system makes things simpler by removing the need that voters vote based only on their looks[9].

To prevent fraudulent (false) voting, we have developed a method where voters may cast their ballots using their fingerprint, iris, or an OTP[10].

III. PROPOSED SYSTEM

A lot of work has been done in this field thanks to its extensive use and applications. This section mentions some of the approaches that have been implemented to achieve the same purpose. These works are mainly differentiated from the techniques for this systems.

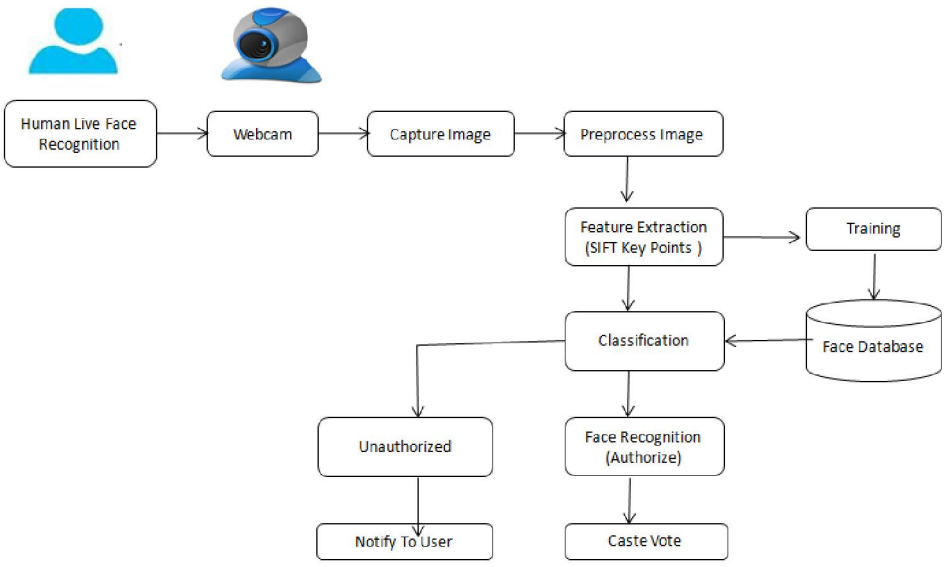

Figure 1. System Architecture

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- Safty.
- Easy access.
- Available in any bank branch.
- Anyone can avail.
- Nomination facility available.

Algorithm

Convolution Neural Network
Step1: Select the dataset.
Step2: Perform preprocessing, feature selection.
Step3: Apply Classification algorithm CNN
Step4: Calculate each Feature fx value of input layer
Step5: Calculate bias class of each feature
Step6: The feature map is produced and it goes to forward pass input layer
Step7: Calculate the convolution cores in a feature pattern
Step8: Produce sub sample layer and feature value.
Step9: Input deviation of the kth neuron in output layer is Back propagated.
Step10: Finally give the selected feature and classification results.

IV. 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 like correctness, verifiability, convenience etc. For this system no requirement of an election officer, paper ballot or any electronic voting machine only the internet connection and Face scanners are required one can vote from anywhere secure..

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