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Facial Recognition for Electorial

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Abstract:

The electoral system has experienced many efficient changes within the past few decades. India, still directs its races utilizing either Secret Ballet Voting (SBV) or Electronic Voting Machines (EVM), the two of which include significant expenses, physical work and are wasteful.In the existing system, it verifies only identification proof, which made more chances for fake voting.

So to overcome this problem, web-based smart voting system along with facial detection and recognition approach is used.Individual voters will be deemed eligible to vote once their identities have been verified. This is very fast and helpful technique to do the verification of the voters. All of the label pictures are trained using a convolutional neural network, which is the class of Artificial Neural Network (ANN) to anticipate the output by categorizing the photos in this technique On the database, data analysis will take place.

Key Words: excel, labeled pictures, CNN, Streamlit modules, OpenCv

Introduction:

An online voting system for Indian election is proposed for the first time through this project. The proposed model has a greater security in the sense that voter high security password is confirmed before the vote is accepted in the main database of Election Commission of India.

The additional feature of the model is that the voter can confirm if his/her vote has gone to correct candidate/party. In this model a person can also vote from outside of his/her allotted constituency or from his/her preferred location. In the proposed system the tallying of the votes will be done automatically, thus saving a huge time and enabling Election Commissioner of India to announce the result within a very short peri

Literature Review:

In India there are two methods used for voting. [1] The methods are secret ballot paper and EVM (Electronic voting machine).The first method is secret ballot paper which required lot of paper. [2] The second method that is EVM is started since in 2003. To marka vote, a voter has to press blue button on EVM (Electronic voting machine) machine against the name and symbol of his/her choicepolitician party.

When the buttons pushed, then red light (lamp) will be shine of lamp against the symbol with beep sound which indicates
that vote is recorded successfully in the record. Every time the process is repeated as well as arrangement of voting booth in increasing in every year and it require more and more manpower on the location of voting booth so it is very difficult to manage the entire schedule of the day.

Process of election preparation is to start before one month of election it requires more space to hiring voting booths. We have to propose a method or a system which is

more secure than the existing system. In this project through face recognition, we have to identify the person/people who is come for vote is valid or not. We have to use two ways of validation in proposed system. The first way is through face recognition and thesecond way is through unique id number.

In face recognition we have to capture the face image by using webcam if the capture picture is matched with current present database of face given by the election commission. If the capture picture match with the respective image of voter in the database, then and then only voter can give their vote in election. We know that existing system is not secure because in existing system the securityis check by only voter card so any person can give other person vote with voter card, but in this system voting is more secure.

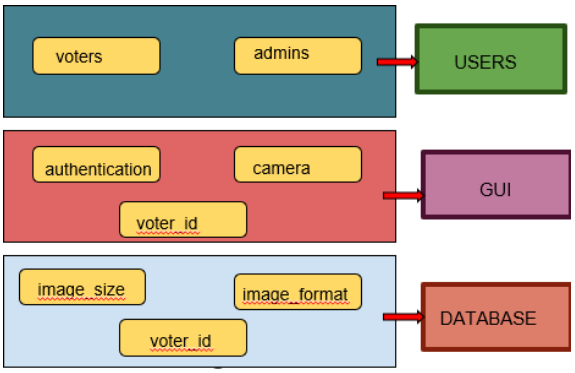
Proposal system is the face capture by using webcam. The webcam is introducing a small digital video camera
directly or indirectly connected to a computer. Webcams present in the form of software that needs to be installed on the computer to help the find out the capture data is match with present data. Webcams capable of taking pictures. Webcams are also known as Web cameras. After capturing image, we can perform the different face recognition algorithm on that image. After that face is match with current database, we can find the UID of that person

Related work:

- In existing systems, voters go to the voting centers and they cast their votes manually.
- It is time consuming and there is chance of gambling the votes.
- This system relies on huge number of skilled people to work at polling booths and hence is difficult to scale up and it's expensive too

Proposed System:

- In the proposed system, I have tried to build a secure online voting system that is free from unauthorized access while casting votes by the voters. The server aspects of the proposed system have such distribution of authoritythat server does not enable to manipulate the votes.
- It is expected that the proposed online voting system will increase the transparency and reliability of the existing electoral system. It uses computer vision techniques for person identification.
- In this proposed system pretrained image processing models and using streamlit module for hosting python based web pages which redirects to multiple webpages and connects excel to store the recorded data



The input is an image of a person's face, which is passed through the face detection component to locate the face. The feature extraction component extracts features from the face, which are used to match the person's identity with a database. The output is the identity of the person, which is then used for accesscontrol purposes

Input image --> Face detection --> Feature extraction --> Identity matching --> Access control --> Output (identity of person)

The system first collects data from the voter, which is stored and retrieved when needed. The image of the voter's face is passed through the face detection and feature extraction components to extract facial features. These features are then used to match the voter's identity with a database. The output is the verification ofthe voter's identity

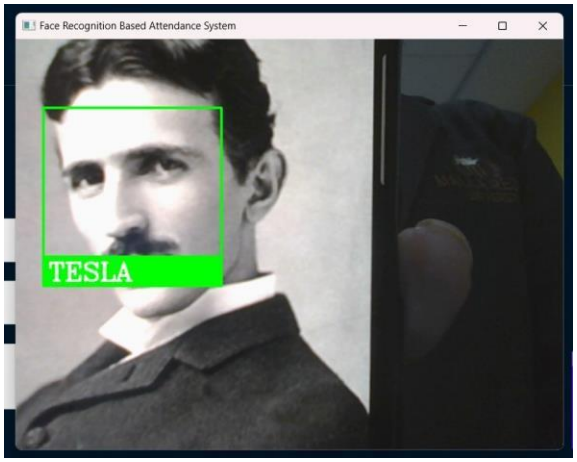
Data collection --> Data storage --> Data retrieval --> Face detection --> Feature extraction --> Identity matching --> Output (verification of voter)

Results:

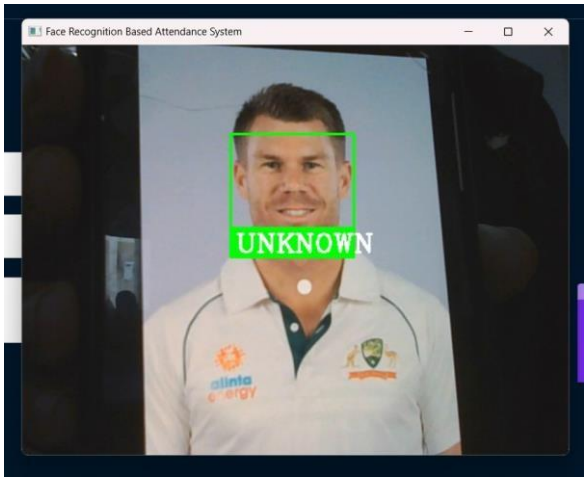
Login page containing of details of voter and a direct mail is sent to users email

On click of verify my id camera access isbeen given and captures users face.

Authorized User

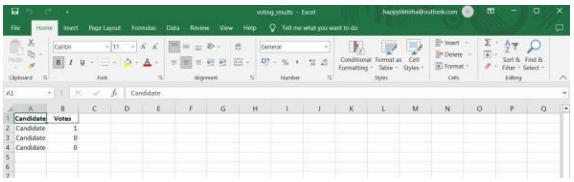


Un-Authorized User



If the use is Authorized it redirects to voting page

Once the vote is casted the vote is beenstored in excel sheet.



Conclusion:

Face recognition has been since its advent a more secure and trustworthy form of authentication by including this feature with our present voting system we could enhance the capabilities of the system and can make it more secure and free from false voting. We proposed the process of an online system, which includes systems like enlistment of voters, vote casting, vote checking, and pronouncing results which would establish a decent answer to substitute for the framework that is in the voting system.

The aim is to develop an application that seeks to use various stages of security authentication to enhance the election process for political party elections. We have also compared their performance based on how they classify faces in the images. The images in the training set were augmented for further enhancement of their features. In future work, we plan on increasing the training dataset and applying other important techniques like Deep learning neural network, etc.

Future Enhancements:

Facial recognition technology has the potential to improve the voting system by ensuring that only eligible voters are allowed to vote and preventing fraudulent activities. Here are some potential future enhancements that could improve the accuracy and fairness of facial recognition for voting: 1) Improve the accuracy of the facial recognition algorithm: Facial recognition algorithms rely on complex machine learning models to match a person's face with their identity. 2) Ensure transparency and accountability: To address concerns related to bias and discrimination, facial recognition algorithms should be transparent and accountable.

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