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Smart EVM for Reducing Frauds, Based on Face Recognition and Biometric Identification with instant Result

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Abstract
India is one of the largest Democratic country in the world. So it consist of millions voters who swing vote in the elections. Voting system is considered as a system of vote in election to choose the people who will govern them through election.

Traditionally, the election commission in India uses ballot papers and boxes, which indeed required more manpower, it was time consuming and was not trustworthy, Then during the recent times Electronic voting machine which was a significant change in traditional voting system , In enhancement of it ,operation of smart EVM using Biometric identification and face recognition can be used, which avoids frauds and ensure safety, guarantee , security, reliability and transparency with smooth functioning of election. This paper gives the innovative approach for voting process which uses Biometric and face recognition is major concept .In this paper, we proposed about the concept of obtaining fingerprint and image of voter which is concede as a input to the system, and is measured with the details stored at database like EPIC details, Aadhaar no, Fingerprint and image ,if the particular paradigm matches with anyone on available record , casting a vote is guaranteed, After voting the database status is updated. The EVM count & the sever count at that particular poll is matched at the end of the time. If it is matched then via cloud the data from each server is merged/integrated, and the result is declared and displayed.

Keywords: *fingerprint identification, face recognition, , Smart Electronic Voting Machine.*

I. INTRODUCTION

In India every citizen who as crossed 18 years have a right to vote. Which provides an opportunity for the citizen to give his opinion in nation? The Electronic Voting machine plays a major role in calculating and keeping the record of the votes, without using any manual discrepancy in a secured way. To avoid fraud some credentials like fingerprint, face recognition, retina detection and gesture detection which provides with the unique identity of the voter which is matched with the data in the data base i.e. EPIC details, aadhaar id number, finger print, and image. Because of this it has become easier to cast the vote using the upcoming technologies, due to which we are able to take the count of voting and maintain the record simultaneously in very less time. As the government has already collected the data and stored the database.

II. RELATED WORK

A. Algorithm based on Finger-Print

To avoid the traditional voting system like ballot paper, GSM mobile based polling machines etc have many drawbacks. To overcome these drawbacks paper[1] i.e biometrics method came into existence which is secure and flexible with real time application, which has automatic counting, due to which publication of result is faster. Thus in this paper ARM processor, fingerprint module and image capture are basic modules having certain other facilities like Alarm/indicator, touch screen LCD display, Printer etc.

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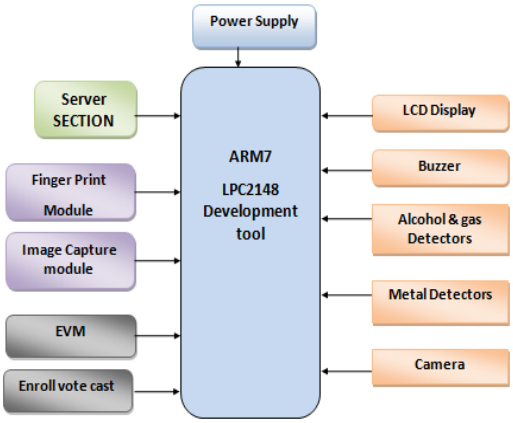

Fig. 1 Block diagram based biometric & face recognition voting system

B. Biometric voting system based on RFID[2]

In this paper [2] the first verification step which is involved is i) RFID tag is used for verification of data which is previously or already stored in LPc2148.RFID consist of two components that is small chip which contains the details of the voter, which is known as transponder and this transponder is surrounded by antenna, and these transponder sends and reads the stored data by RFID reader which checks the voter belongs to the same polling booth. and the fingerprint scanner checks for voters personal details if where the RFID is for the Person or not.

C. An Hybrid solution For Voting[3]

As there are less chances of security, to build more security bio-hashing technique is imple-mented , In which the hash code is generated and is compared with all data and a 13 digit key is generated and is stored as barcode. And some unique EPIC details like fingerprint, aadhaar id, and when the hash value matches the data stored in database the voter is able to give vote. The data in the EVM cannot be updated or changed.
But the drawbacks of this system:
1. The memory which is used should be increased.
2. It will wait until the data is processed.
3. The data can be retained only within 2 years.

D. Facial Recognition based on CNN[4]

The face detection concept was made real-time and was proposed by Viola and Jhones ,They worked and proposed a cascade Adaboost frame work which worked on real time face detection. The R-CNN framework gave the 73% accuracy and faster detection face recognition with the defined result. Which checked for the correctly

- Alignment for face prior to feed them into the CNN. Which Employee to wrap the faces into deep network, to classify to know the original identity. One can change the program installed in the EVM and tamper the results after the polling
- By replacing a small part of the machine with a look-alike component that can be silently instructed to steal a percentage of the votes in favor of a chosen candidate.
- These instructions can be sent wirelessly from a mobile phone.

III.LITERATURE SURVEY

Limitations of Existing System

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Reference	Limitations
[1]	• Wastage of time. • Manual voting using ballot paper. • Person not having hands are not able to vote.
[2]	• Less internal memory • Time consuming, to give count. • Less Security..

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[3]	• I nternal memory has to be increased. • It will take time to process the data It can only retain the data for 2 years.
[4]	• Large number of entities are required

IV.PROPOSED SYSTEM

To make the election process more effective and secure the following system or related system is implemented.

1. Voter goes for voting in the poll.
2.. Gets fingerprint via module, if he has burns on his hands or if he has no hands, so 2nd option to recognize by face, then these details will be matched with the database which is created before elections and this database will contain details like:

EPIC details, aadhaar no. ,and finger print when taken by bio metrics ,and captured image which are stored in data base do not match with database than the buzzer will give alert ,to the electoral officer and the voter/person will not be permitted to give vote.

3.The Eligible person will be able to vote, after he finishes the voting process, the status of voter in his database will get updated.
4. After the voting is successful at the end of the day. The data from the server and EVM will be matched .
5. This process after completion of every poll will be integrated/Merged via cloud.
6. Result will be displayed on that particular day.

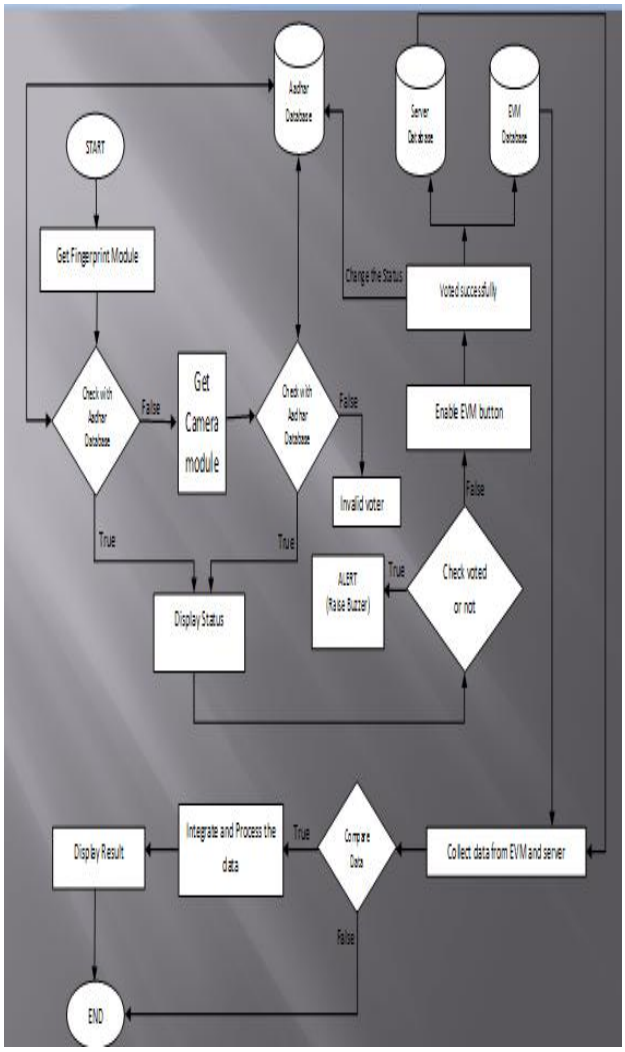

Fig. 3 : Flow chart of our proposed System.

Advantages of System

- Rigging will be eliminated completely
- Preserves voting secrecy, No scope for invalid votes
- Facilitates quick and accurate counting – possible to declare results instantaneously on that particular day.
- Re-usable by simply erasing votes recorded in earlier poll.
- Persons without fingers/hands may not cast their votes

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- As the whole data of the fingerprints of the people is available, it can be used for identifying thieves, culprits i.e. it'll be more helpful for Police Dept. for investigation.
- Easier to manage with less demand on man-power.

V.CONCLUSION

Face recognition and fingerprint result in the unique identity with different characteristics like age, expressions, distance between eyes etc. which plays a very important role in providing security. As no illegal work of fake voting can be done. And the result will be displayed on the same day. As this Proposed system works on real-time application which is compared with the traditional approach. It is proved to be promising method to work as a standalone authentication system, with accurate and fast voting result.

Acknowledgment

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REFERENCES

[1] Anandaraj , S,Anish R, Devakumar P.V "Secured Electronic Voting Machine using Biometric" IEEE Sponsored 2nd Internatinal Conference on Innovations in Information, Embedded communication system(ICIIECS)2015

[2] M.Liang and X.Hu, Recurrent convolution neural network for object recognition, 2015 IEEE Conference on Computer Vision and PatternReconition(CVPR).pp.33673375,2015

[3] Ansif Arjoo, Mohsin Raiz" Electronic voting with biometric verification offline and Hybrid EVMS solution " The sixth International Conference on Innovative Computing Technology(2016)

[4] Xiaolu Cheng; Richmond; Jessica Lu; A Survey on RFID Applications in Network; 2015 International Conference on Identification ,Information , and Knowledge in the Internet of Thing(IIKI);Beijing; 22-23 oct.2015;pp.146-151.

[5] Y.Taigman,M.yang, M.Ranzato and L.Wolf. Deepface: closing the gap to human-level performance in face verification. In IEEE Conf. on CVPR,2014. 1,2,5,7,8,9

[6] H.Jiang and E.Learned-Miller .Face detection with faster r-cnn.arXiv 2016.

[7] M.A.K. Mohamed, A. El-Sayed Yarub, and A.Estaitia, Automated Edge Detection Using Convolution Neural Network,Int . J. Adv. Comput.Sci.Appl.,vol.4, no.10,pp.1117,2013

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