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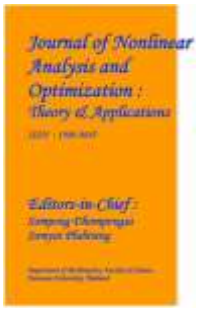

MACHINE LEARNING BASED IRIS RECOGNITION MODERN VOTING SYSTEM

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ABSTRACT— Voting has historically taken place using paper ballots, Electronic Voting Machines (EVMs) based on Direct Response Electronics (DRE), or identical ballot boxes. In order to overcome the shortcomings of the current voting method, this study suggests a digital voting system based on a machine learning algorithm that incorporates iris recognition. The Iris recognition-based Voting System is a program that uses an individual's eye iris pattern to identify them. An automated biometric identification system called iris recognition uses video footage of one or both of a person's iris to detect intricate patterns that are stable, unique, and observable from a distance. Voters are only allowed to cast one ballot, and the proposed technology can identify duplicate entries, so it prevents the same person from casting numerous ballots. Furthermore, since the Aadhar is integrated with the voter ID, this method eliminates the need for the user to carry a voter ID with the necessary information. This improves digitization by digitally verifying the biometric and iris pattern found on each user's Aadhar card. The voter's iris can be taken and used as identity at the polling place with a straightforward iris scan. Image capture, iris segmentation, feature extraction, and pattern matching are the four processes that make up the iris recognition process. Because of its high identification rate, iris recognition is one of the most reliable biometric modalities. Thus, by integrating the most recent developments, this system improves digital voting and removes the main shortcomings of conventional voting methods.

Index Terms— Iris recognition, Image Segmentation, Databases.

I. INTRODUCTION

The integrity and accessibility of the voting process are essential elements of democratic governance. From the traditional paper ballot to the more contemporary electronic voting systems, societies have employed a range of strategies to promote voter turnout in elections over the ages. However, these methods also have disadvantages, including problems with accuracy, security, and inclusivity. Innovative solutions to these issues that aim to enhance the voting process have been made possible by technological advancements. One such option, according to the report, is incorporating iris recognition technology into the voting procedure. Iris recognition, an automated biometric identification technology, offers a unique and reliable method of verifying a person's identity based on the unique patterns present in the iris. This paper explores the concept of an iris recognition-based voting system to alleviate the shortcomings of traditional voting systems. By using the high precision and reliability of iris recognition, this approach aims to address concerns with voter verification, security, and accessibility. This cutting-edge voting system is being implemented at a pivotal moment when safe and inclusive election processes are more crucial than ever.

This paper explores the concept of an iris recognition-based voting system to alleviate the shortcomings of traditional voting systems. By using the high precision and reliability of iris recognition, this approach aims to address concerns with voter verification, security, and accessibility. This cutting-edge voting system is being implemented at a pivotal moment when safe and inclusive election processes are more crucial than ever.

II. LITERATURE SURVEY

A. A survey of different electronic voting systems

A democratic country's primary responsibility is to ensure safe and fair elections. All voting systems must meet the necessary security requirements, whether they are electronic or traditional paper-based. Eligibility, fairness, privacy, lack of receipts, verifiability, and resistance to compulsion are the most crucial of these attributes. Numerous electronic voting methods have been put in place throughout history to offer a more practical and efficient option to paper voting. The strengths and

weaknesses of several types of electronic voting systems are evaluated in this research.

B. Cryptography and network security

The method of using codes to secure communications and information so that only the intended recipients can decipher and process it is known as cryptography. Consequently, information cannot be accessed without authorization. The suffix graphy means "writing," while the prefix "crypt" signifies "hidden." The first is secrecy, which essentially means that we must ensure that no one will view our data while it is being transmitted over a network. Another function that encryption offers is access control and authentication. Other features that cryptography offers include integrity and non-repudiation.

C. Online Voting System For Iraqi Federal Government

Since technology has advanced so quickly in recent years, several nations have switched from traditional to electronic voting because of its potential benefits, which include speed and dependability. This essay examines the Republic of Iraq's current voting system and the primary issues that arise from its operation. Our findings demonstrated that, in accordance with international standards, the current voting system needs to be updated utilizing information and communication technologies due to security issues.

III. PROPOSED SYSTEM

The overview of our proposed system is shown in the below figure.

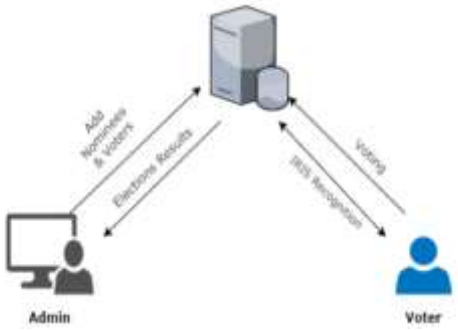

Fig. 1: System Overview

Implementation Modules

Admin

- The administrator can access this module by using a valid username and password. Once logged in, they can add nominations, view nominees, add voters, view voters, and view results.

User

- This allows users to examine nominations, caste votes, and results after logging in with a valid username and password that has been authenticated with their iris.

IV. RESULTS

Fig. 2: Main page

Fig.3: Admin Login

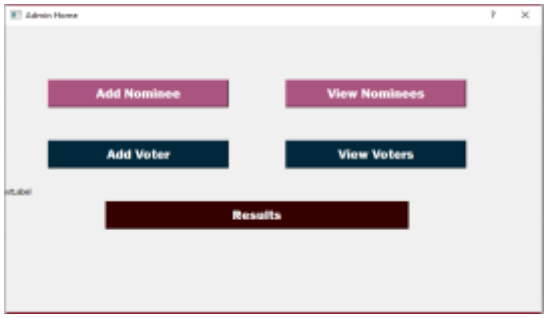

Fig.4: Admin Home Page

Fig.5: Add Nominee

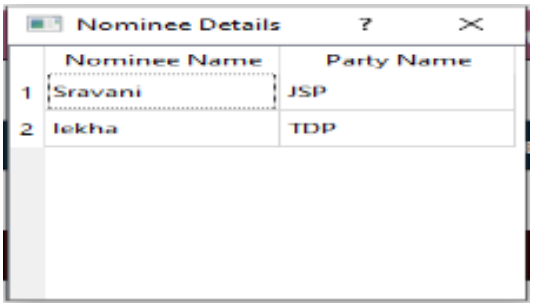

Fig.6: View Nominee Details

Fig.7: Add voters

V. CONCLUSION

An important development in safe, dependable, and effective election procedures is the Machine Learning Based Iris Recognition Modern Voting System. This technique lowers the dangers of identity fraud and improves voter verification by utilizing the distinctive and unchangeable features of the human iris. High precision and flexibility in a range of real-world scenarios are guaranteed by the incorporation of machine learning techniques. In addition to enhancing the voting process's integrity, this contemporary strategy fosters voter trust

and openness. Such biometric technologies have the potential to completely transform political participation on a worldwide basis as technology advances.

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