School Voting System with Fingerprint Authentication

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Abstract

The proposed online voting system with biometric authentication is an electronic voting system which seeks to make use of the uniqueness of the minutiae of the human fingerprint to further enhance the level of trust and confidentiality of the voters in the system as well as making the actual process as universally accessible as possible which would be achieved through the deployment on the Internet. It is expected to solve the two critical issues facing student elections conducted within the University of Embu community which serves as the project case study. For the voter registration and authentication processes which are performed on the desktop module, the voter is expected to have his or her fingerprints captured and the minutiae extracted that is stored on the database. This is done to prevent the occurrence of multiple registrations or identity. Thus, during the authentication period, voters are expected to undergo a matching verification of their fingerprint samples against the values stored in the database which is identified through the use of a unique voter identification number assigned during registration. The project was able to achieve a high success rate in the use for conducing elections as it was able to stamp multiple registrations by voters through combined use of both the unique voter identification number and their unique fingerprint effectively.This project was developed using SIFT A1gorithm technique to perform voting operations. Scale Invariant Features Transform (SIFT) is an algorithm in computer vision to detect and describe local features in images. The features are invariant to image scaling and rotation. They are well localized in both the spatial and frequency domains. The features are highly distinctive, which allows a single feature to be correctly matched with high probability against a large database of features, providing a basis for object and scene recognition.