

Secure Voting through Facial Authentication and Gesture Control

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Abstract: *The project “Gesture and Face Recognition Based Voting System” introduces a secure and intelligent approach to modern electronic voting using artificial intelligence and computer vision.*

The system integrates face recognition and hand gesture recognition technologies to ensure voter authenticity and enhance accessibility. It eliminates traditional password or ID-based logins, minimizing the risk of impersonation and fraudulent voting. In this system, the admin plays a key role by managing voter registration, adding political parties, and announcing election results.

During registration, each voter’s facial data and voter ID are stored securely. At the time of voting, the user logs in through face recognition implemented using MTCNN (Multi-task Cascaded Convolutional Networks) for accurate face detection and FaceNet for robust facial feature matching. Once verified, the voter casts their vote through hand gestures detected by MediaPipe, ensuring a contactless and intuitive voting experience.

Keywords: Gesture and Face Recognition

