RESEARCH ARTICLE

A Face Recognition Approach for Universal Identification (FL-UID)

George Jose Malayil[1], Amit Sebastian[2], Bindu Rajan Rindu Rajan[3],

Gowri R[4], Elizabeth B Varghese[5]

Department of Information Technology, Mar Baselios College of Engineering and Technology, Trivandrum

[1] georgejm010@gmail.com; [2] amitjordan08@gmail.com; [3] rindu.9o@gmail.com; [4] gowrijram@gmail.com; [5] eliza.b.varghese@gmail.com

Abstract—FL-UID is a face recognition technology that enhances the identification and verification of citizens being part in the election procedure. Facial recognition is a type of biometric software application that can recognize a specific person using his digital image by analyzing and comparing some patterns. These systems are commonly used for security and authentication purposes. This application is implemented with three techniques PCA (Principal Component Analysis) which does the dimensionality reduction, LDA (Linear Discriminant Analysis) which does the feature extraction and Neural Network which does the actual matching. Mainly there are two sections i.e., identifying a voter and recognizing him to cast vote. In the proposed election procedure the user comes to vote and his image is captured, captured image is transformed into a matrix and is given for PCA, LDA and neural networks. The final output is an image, the recognized and identified one. If recognized, voting machine is enabled, otherwise disabled. This technology can be implemented with MATLAB and can be integrated with the election system. Simulation results demonstrated that the proposed system can improve authentication and also the problem of bogus vote can be entirely eliminated.

Keywords: Face recognition; Principal Component Analysis (PCA); Linear Discriminant Analysis (LDA; Neural Network; Back Propagation.

Full Text: http://www.ijcsmc.com/docs/papers/ICMIC13/ICMIC13R5.pdf