

ABSTRACT

Nowadays security becomes one of the most highest priority for everyone, including in access to their gadget. And when password is considered not secure enough, biometric becomes a solution to be implemented as access control on gadget, for example on handphone. Android phones that are being popular make the users consider security and exclusivity as important things. They do not want other people to be able to access their Android phones without permission. Therefore, this face recognition system as unlock screen function on Android is designed and implemented.

At the pre-processing step, several operations are committed such as cropping, resizing, converting to grayscale, and histogram equalization for light normalization. This face recognition system is designed using eigenface approach. At the classification level, Euclidean distance is used to determine the similarity level between new input face image and training images in database.

The system performance is measured according to accuracy and processing time. According to the results of testing and analysis, in bright and dreary condition the same EER 20% is achieved at 198 and 213 of threshold. When acquisition distance is 40 cm, EER 20% is achieved at 198 of threshold. And when acquisition distance is 80 cm, system accuracy seems to decrease because EER 20% is achieved at high enough threshold, 225. 200×200 resized image give EER 35% at 258 of threshold.

Keywords: *face recognition system, unlock screen, eigenvectors, eigenvalues, threshold, FAR, FRR, Android*