Abstract

The advent of technology has enabled the new way of identifying individuals. Biometrics is one of the emerging technologies designed to identify people through physiological and behavioural characteristics. In order to further improve the existing security infrastructure, research into identifying new ways of identifying an individual is carried out. The middle phalanx print is a region located between the finger joints on the human hand which is rich in texture and fine wrinkles. Research carried out has shown that through image acquisition, pre-processing, feature extraction, and classification, the middle phalanx print were able to be analyzed satisfactorily. The Local Binary Pattern was used as the feature extraction algorithm in combination with the Support Vector Machine as a classification algorithm. Both algorithms were implemented through MATLAB. The LBP-SVM algorithm achieved 100% classification rate from the feature vectors of the middle phalanx print, suggesting that the middle phalanx print can be used to classify and identify a person.

Index Terms

Computer Science Information Sciences

Keywords

Biometric system, Image acquisition and database, Preprocessing