

Palmprint Based Biometric System: A Comparative Study on Discrete Cosine Transform Energy, Wavelet Transform Energy and SobelCode Methods

Abstract

Palmprint based biometric identification has gradually attracted the attention of researchers due to its richness in amount of features. Palmprint contains geometry features, line features, point features, texture features and statistical features. In this paper, simple and effective methodology for palmprint based identification system is proposed. The right hand image is captured using a digital camera without pegging or illumination arrangements. The captured image is aligned using identified key points in the hand and the palmprint region is selected for enhancement and resizing. Different feature extraction methods, namely Discrete Cosine Transform energy features, Wavelet Transform energy features and SobelCode are applied to the resized image to obtain feature vectors. The extracted feature vectors are matched using similarity measurement and feed forward back propagation neural network. The proposed schemes are tested with hand images from 101 individuals.