

Palmprint Recognition Using Principal Lines Characterization

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Abstract

In this paper, a novel contactless Palmprint recognition system using palm print principal line-based feature extraction technique has been proposed. The discriminative Palmprint features were extracted from a pre-processed acquired images using easily available and low cost camera. Distances from endpoints to endpoints and point of interception to endpoints were calculated and transformed to frequency domain by the application of Discrete Fourier Transformed (DFT) technique. The extracted K-points DFT coefficients has been used as the discriminating features for recognition and identification purposes using correlation technique, power spectral matching and Euclidean distance measure. The proposed technique has been observed to be rotation, scale and translation invariant and accuracy of 100% was achieved in a 1-to-4 recognition and classification verification.

Keywords: Feature extraction, Vectors, Image edge detection, Image segmentation, Symmetric matrices, Discrete Fourier transforms, Biometrics

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