Abstract

Feature vector generation is an important step in biometric authentication. Biometric traits such as fingerprint, palmprint, iris, & finger-knuckle prints are rich in texture. This texture is unique and the feature vector extraction algorithm should correctly represent the texture pattern. In this paper a texture feature extraction methodology is proposed for iris and palmprints. This method is based on one step transform of the two dimensional images and then using the intermediate transformation data to generate complex planes for feature vector generation. This method is implemented using Walsh, DCT, Hartley, Kekre Transform &Kekre Wavelets. Results indicate the effectiveness of the feature vector for biometric authentication.
Texture Feature Extraction using Partitioned/Sectorized Complex Planes in Transform Domain for Iris & Palmprint Recognition

References

- Hong Kong University PolyU Database: www4.comp.polyu.edu.hk/~biometrics/2D_3D_Palmprint.htm
- Phoenix Iris Database: http://phoenix.inf.upol.cz/iris/ download
Texture Feature Extraction using Partitioned/Sectorized Complex Planes in Transform Domain for Iris & Palmprint Recognition

- C. Ching, C. Chen, "High Performance Iris Recognition Based on LDA and LPCC", 17th IEEE International Conference on Tools with Artificial Intelligence (ICTAI’05), pp. 421-426, 2005
- Hong Kong University PolyUDatabase : www4.comp.polyu.edu.hk/~biometrics/2D_3D_Palmprint.htm
- Phoenix Iris Database: http://phoenix.inf.upol.cz/iris/download/, (Referred on 10-09-2009, 10:00 a.m.)
- H. B. Kekre, A. Athawale, D. Sadavarti, "Algorithm To Generate Kekre’s Wavelet Transform from Kekre’s Transform", IJSET, June 2010
- H. B. Kekre, V. A. Bharadi, “Hybrid Multimodal Biometric Recognition Using Kekre’s
Texture Feature Extraction using Partitioned/Sectorized Complex Planes in Transform Domain for Iris & Palmprint Recognition

Wavelets, 1D Transforms & Kekre’s Vector Quantization Algorithms Based Feature Extraction of Face & Iris”, International Journal of Computer Application (IJCA), Special Issue for ACM International Conference ICWET 2011, February 2011

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