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A NEW APPROACH FOR PERSON VERIFICATION SYSTEM BASED ON FINGER-KNUCKLE PRINT BIOMETRIC AND MLP NEURAL NETWORK

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ABSTRACT

Developing secure and effective access-control systems requires person-identification technologies that are reliable and convenient. This paper presents a new approach for the human identification system, which is based on the finger-knuckle print biometrics. The system uses image statistics and Two- Dimensional Discrete Walsh Hadamard Transform domain coefficients for the feature extraction. Principal component analysis is specifically used for the input dimensionality reduction of the feature vector. The Multi Layer Perceptron (MLP) Neural Network is recommended for precise and accurate recognition of a person. The performance of the proposed system is evaluated in terms of classification accuracy. The experimental results showed that the proposed person verification system achieved 100% accuracy on testing dataset.

KEYWORDS: Biometrics, Finger-Knuckle, Neural Network, Multi Layer Perceptron (MLP), Discrete Walsh Hadamard Transform (DWH), Principal Component Analysis (PCA)