

NEURAL NETWORK BASED IRIS RECOGNITION USING FEATURES FROM HISTOGRAM ANALYSIS AND SINGULAR VALUE DECOMPOSITION

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Abstract

Today's e-security are in critical need of finding accurate, secure and costeffective alternatives to passwords and personal identification numbers (PIN) as financial losses increase dramatically year over year from computer based fraud such as computer hacking and identity theft. Biometric solutions address these fundamental problems. As a result many organizations are searching ways for more secure authentication methods for the user access. In network security there is a vital emphasis on the automatic personal identification. Due to its inherent advantages biometric based verification especially iris identification is gaining a lot of attention. Iris recognition uses iris patterns for personnel identification. The system steps are capturing iris image, localizing iris and the iris pattern recognition. The iris is extracted from the eye image. Due to the high degree of freedom in iris pattern only part of the iris structure is selected for recognition. The proposed methods are Histogram and Singular Value Decomposition based technique that extracts important features using transformed coefficients. Obtained features are fed to multiplayer perceptron neural network with different learning rules and activation functions for person identification. Experimental results show that the histogram based feature extraction technique has an encouraging performance compared to SVD.

Key Words : *Biometrics, Iris recognition, Personal identification, SVD, ANN, MLP.*