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A Hybrid DWT, PCA and ICA Features for Face Recognition using Neural Network and k-NN Classifiers

Manish Saxena
Asst. Professor
Department of Electronics and Communication
Bansal Institute of Science & Technology, Bhopal
(India)
manish.saxena2008@gmail.com

Mohammad Shakir
M. Tech. Scholar
Department of Electronics and Communication
Bansal Institute of Science & Technology, Bhopal
(India)
documents.shakir@gmail.com

Abstract – **Face recognition is one of the most relevant applications of image analysis. It is a relevant subject in pattern recognition, computer graphics, image processing neural networks and psychology. Face recognition depends on the particular choice of features used by the classifier for that purpose we are using three different technologies i.e. PCA, ICA and Neural Network in which Neural Network is working as a good classifier. The main work of classifier is to obtain the optimal subset of features under some criteria leading form a given set of extracted features and also can be displayed on future trials using novel (unseen) test data. The features of images found by PCA depend only on pair wise relationships amongst pixels in the image database. In this paper, the face recognition system based on DWT-PCA-ICA and Neural Network has been developed and its performance has been compared with k-NN classifier method. Neural Network is used to improve the accuracy of our recognition system by auto threshold setting. Simulation Results show that the proposed research work gives the best performance.**

Keywords –**ICA, PCA, Neural Network.**