Abstract

Face database contains images taken at various instants of the same person. The matching accuracy of spatial features drops significantly both in the presence of noise as well as when the variations in the different instances are high. To attenuate the image variations up to certain extent, image data is transformed from spatial domain to transformed domain. In this paper an effort is made to explore the effect of using fractional order spectrum obtained by the application of 2D FRDCT on the accuracy of face recognition. PCA is used as dimension reduction approach for reducing transformed feature set dimensionality. Reduced feature set is then classified by back propagation neural network classifier. Through the experiments performed on AT&T database it is shown that proposed FRDCT feature set approach gives a recognition accuracy of 94% with BPNN. Comparison is conducted for fractional order feature classification accuracy of AT&T public database with nearest neighbour classification approach. Experimental result shows marked reduction in classification error rate with neural network classification.
References

- www. face-rec. org
Index Terms

Computer Science

Image Processing

Keywords

DCT (Discrete Cosine Transformation)  BPNN (Back propagation neural network)
FRDCT (Fractional Discrete Cosine Transformation)
PCA (Principal Component Analysis).