Abstract

Face recognition is one of the most active research areas in computer vision and pattern recognition. This paper compares the different face recognition techniques like visual face recognition, thermal face recognition, eigenface approach and feature extraction techniques like geometry-based feature extraction (Gabor wavelet transform), appearance based techniques, color segmentation based techniques and template based feature extraction. PCA is used in extracting the relevant information in human face. Face images are projected on to the face space which encodes the variation among known face images. This paper discusses feature extraction techniques with pros and cons. Performances of these techniques are different with various factors such as face expression variation, illumination variation, noise and orientation. Visual face recognition systems perform relatively reliably under controlled illumination conditions. Thermal face recognition systems are advantageous for detecting disguised faces or when there is no control over illumination. Thermal images of individuals wearing eyeglasses may be poor performance since eyeglasses block the infrared emissions around the eyes, which are important features for recognition.
References

- Kcbin Cut, Feng Han, Ping Wang; Research on Face Recognition based on Boolean Kernel SVM; IEEE, vol, 83, no. 5, pp. 705-740, 2008.
- M. Jones and P. Viola; Face Recognition Using Boosted Local Features; IEEE International Conference on Computer Vision, 2003.


- Bruce A. Draper, Kyungim Baek, Marian Stewart Bartlett, J. Ross BeveRidge; Recognizing Face with PCA and ICA; Computer Vision and Image Understanding 91, pp. 115–137, 2003.
Comparative Study of Feature Extraction Techniques for Face Recognition System

- Sanjay Kr. Singh, D. S. Chauhan, Mayank Vatsa, Richa Singh, "A Robust Skin Color Based Face Detection Algorithm"

Index Terms
Computer Science  Emerging Trends in Technology

Keywords
Face Recognition  Face Feature Extraction  Pca  Gabor Wavelet Transform  Template Based Feature Extraction