Abstract

Reliable person recognition is integral to the proper functioning of our society. Many researches in face recognition have been dealing with the challenge of the great variability in head pose, lighting intensity and direction, facial expression, and aging. The last few years more and more 2D face recognition algorithms are improved and tested on less than perfect images. However, 3D models hold more information of the face, like surface information, that can be used for face recognition or subject discrimination. A 3D face image is represented by 3D meshes or range images which contain depth information. Range images have several advantages over 2D intensity images and 3D meshes. Range images are robust to the change of color and
illumination, which are the causes for limited success in face recognition using 2D intensity images. In the literature, there are several methods for face recognition using range images, which are focused on the data acquisition and preprocessing stage only. In this paper, we have proposed a new method based on Radon transform and PCA for face recognition using 3D range images. The experimentation has been done using Texas 3D face database. The experimental results show that the proposed algorithm performs satisfactorily with an average accuracy of 96.00% and is efficient in terms of accuracy and detection time.

References

- L. Sirovich, M. Kirby, “Low-dimensional Procedure for the Characterization of

**Index Terms**

Computer Science  
Image Processing

**Keywords**

3d Face Recognition  
Range Images  
Radon Transform  
Principal Component Analysis

Knn

Svm.