Face detection and Recognition: A review

Abstract

Face Detection is one of the type of biometric technique which refers to the detection of face automatically by computerized systems by taking a look at face. It is a popular feature used in biometrics, digital cameras and social tagging. Face detection and recognition has gained more research attentions in last few years. In this paper we studied different approach of face detection and implement it on the MATLAB software.

Synopsis

Face identification means a 1:N problem that compares a query face image against all image templates in a face database.
Implementation of the face recognition algorithm to detect and recognize faces accurately is on the MATLAB.
Face detection and recognition becomes the most biometrics authentication techniques from the past few years.
There are basically three approaches for face recognition.
Feature base approach: In feature based approach the local features like nose, eyes are segmented and it can be used as input data in face detection.
Holistic approach: in holistic approach the whole face taken as the input in the face detection system.

Highlights

- Face detection and recognition becomes the most biometrics authentication techniques from the past few years
- There are basically three approaches for face recognition : Feature base approach: In feature based approach the local features like nose, eyes are segmented and it can be used as input data in face detection to easier the task of face recognition
- Holistic approach: In holistic approach the whole face taken as the input in the face detection system to perform face recognition
- B) Face recognition using template matching This is similar the template matching technique used in face detection, except here we are not trying to classify an image as a 'face' or 'non-face' but are trying to recognize a face
- The results are Conclusion The facial expression recognition system contributes a resilient face recognition model based on the mapping of behavioral characteristics with the physiological biometric characteristics

- The physiological characteristics of the human face with relevance to various expressions such as happiness, sadness, fear, anger, surprise and disgust are associated with geometrical structures which restored as base matching template for the recognition system

Summary

Introduction

Face detection and recognition becomes the most biometrics authentication techniques from the past few years.

Face identification means a 1:N problem that compares a query face image against all image templates in a face database.

Implementation of the face recognition algorithm to detect and recognize faces accurately is on the MATLAB.

After a great deal of experimentation, the researcher found that the following areas of the human face were suitable for a face detection system based on image invariants and a deformable template.

Results

In the Face recognition process the input image is compared with the database.

There are basically three approaches for face recognition : Feature base approach: In feature based approach the local features like nose, eyes are segmented and it can be used as input data in face detection to easier the task of face recognition.

Holistic approach: In holistic approach the whole face taken as the input in the face detection system to perform face recognition.

Face recognition Human face recognition can be divided into two strategies: geometrical features and template matching.

The advantage of using geometrical features as a basis for face recognition is that recognition is possible even at very low resolutions and with noisy images.

The face cannot be viewed in detail its overall geometrical configuration can be extracted for face recognition.

B) Face recognition using template matching This is similar the template matching technique used in face detection, except here we are not trying to classify an image as a 'face' or 'non-face' but are trying to recognize a face.

The basis of the template matching strategy is to extract whole facial regions and compare these with the stored images of known individuals.

Algorithm for face Recognition Adding the image to the database

3. Apply the FaceDetector object to the image to extract the features of detectedface.

Comparing the input image with the database of images 1.

3. Apply the FaceDetector object to image and extract the features.

Conclusion

4. Compare the image with the database.

2. we tested for two images, one of same person and one of different and the results were The image of same person is recognized correctly and class is detected.

The physiological characteristics of the human face with relevance to various expressions such as happiness, sadness, fear, anger, surprise and disgust are associated with geometrical structures which restored as base matching template for the recognition system.

Experimental analysis and study show that the hierarchical security structures are effective in geometric shape identification for physiological traits

Contributions

The facial expression recognition system contributes a resilient face recognition model based on the mapping of behavioral characteristics with the physiological biometric characteristics. The physiological characteristics of the human face with relevance to various expressions such as happiness, sadness, fear, anger, surprise and disgust are associated with geometrical structures which restored as base matching template for the recognition system. Experimental analysis and study show that the hierarchical security structures are effective in geometric shape identification for physiological traits.