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An effective technique for expressing and recognizing feelings

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ABSTRACT

In addition to the traditional problems with facial images captured in uncontrolled settings, such as different poses, different lighting and expressions for facial recognition, and different audio frequencies for emotion recognition. For any face and emotion detection system, the database is the most important part to compare facial features and Mel frequency audio components. To create a database, facial features are calculated and these features are stored in the database. This database is then used for facial and emotion evaluation using various algorithms. In this article, we will implement an efficient method to create a database of facial features and emotions, which will then be used to recognize a person's face and emotions. We use the Viola-Jones face detection algorithm for face detection from the input image, and the KNN classifier is used to evaluate face and emotion detection.

Key Words: Face Detection, Facial Expression Recognition,Feature Extraction, Mel Frequency Component,

INTRODUCTION

Facial recognition plays a fundamental rule in human-computer interaction. A facial recognition system can be either an authentication or an identification system depending on the context of the application. The authentication system verifies a person's identity by comparing the captured image with their own templates stored in the system. It performs a one-to-one comparison to determine whether the person presenting to the system is who they claim to be. The identification system recognizes a person by checking the entire template database for a match. It includes one to many searches. The system will either match or subsequently identify the person, or it will fail to match. In general, the three important steps involved in a face recognition system are: (1)

detection and coarse normalization of faces, (2) feature extraction and fine normalization of faces, (3) identification and/or verification.

Face detection determines the location of human faces in an input image, which plays an important role in applications such as video surveillance, human computer interface, video conferencing, and biometric applications [4]. Automatic human face detection from images is a challenging task due to differences in image background, viewpoint, lighting, articulation, and facial expression. Based on computer vision research, Haar wavelet is used to detect image features for object recognition [5]. The success of real-time face recognition systems is limited by variable image quality due to unreliable environmental conditions. Solving this problem is therefore an active area of research and development. Most face recognition (FR) approaches have

focused on the use of two-dimensional images. Because FR is still an unsolved problem under different conditions such as position, lighting or database size. Expressing emotions and recognizing a person's affective state are skills indispensable for natural human interaction and social integration. The study of emotions has attracted the interest of researchers from very diverse fields, from psychology to applied sciences. Facial feature and emotion detection is currently a very active research area in computer vision, as various kinds of face detection applications such as image database management system, monitoring and surveillance are currently being used.

analysis, biomedical imaging, smart room robots, human computer interface and driver alertness system

OBJECTIVE OF THEWORK

a method to reveal a person's face and emotions. The work is divided into two parts to store facial features and human voice features and the second to evaluate a person's face and emotions using a feature database.

Phase 1:

We use the Viola Jones face detection algorithm to create the face detection database. Counts of input images are collected to create a database. The figure shows the overall implementation for creating a database for detecting facial features and creating a database. The input images, Viola ones, are used to create the database

a face detection algorithm is applied to the input image. After applying the algorithm, a face is detected from the image and various features of the image are calculated from the face of the image. This feature type is calculated to save the surface of the surface, surface edges, major axis and minor axis from the surface and the shape type or eccentricity of the surface to the database. If the face eccentricity is 0, the face shape is a circle and if the face eccentricity is 1, then the face shape will be bordered

database. Now the person's voice is given as input to the system to detect the person's emotions. The various vocal properties of the input voice are calculated using the Mel frequency components of the voice. The MFCC, fundamental frequency, pitch and harmonic properties of the voice are taken into account for the database creation and evaluation phase. Now the KNN algorithm is used to evaluate the similar features from the database created in phase 1. The KKN classifier algorithm provides the emotions of the person whose features are compared from the database. Once we have calculated all these features from the face, these features are stored in the database with the person's name. Now we will create a database for voice features with different emotions of a person. The figure shows the overall implementation for creating a database for detecting emotion features and creating a database. A person's audio file is given as input to the system. The algorithm calculates the various Mel frequency components of the voice input. A total of 22 Mel frequency components of the voice are calculated. Now from each Mel folder the elements are calculated. There are a total of 281 different functions that are calculated from the Mel folder. When all features are calculated, these features are stored in a database with the person's name and voice emotion type. We use the following emotion type sample to create the database: Happy, Sad, Angry, Surprised and Normal

Conclusion

a person's face and emotions. We use Viola Jones' well-known face detection method to detect the face from the image, and we used the Mel frequency components of the human voice to detect the voice elements. Using the KNN classifier algorithm, it is used to reorganize a person's face and emotions. Experimental results show that the efficiency of the proposed face and emotion reorganization system is 94.5 to 97%.

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