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Robust Face-Name Graph Matching For Movie Character Identification

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Abstract

Automatic face identification of characters in movies has strained important do research benefit and lead to several attractive applications. It is a difficult problem due to the massive difference in the form of each character. Even though presented methods make obvious hopeful outcome in sparkling atmosphere, the performances are some degree of in compound movie scenes due to the noises generated at some stage in the face tracking and face clustering development. In this paper we present two schemes of global face-name matching based structure for robust character identification. The offerings of this work include the following.

1) A noise thoughtless character connection demonstration is integrated.
2) In introducing correct procedure based graph matching algorithm.
3) Difficult character changes are handled by all together graph screen and graph matching.
4) Further than presented character identification approaches, and then perform an in-depth understanding psychoanalysis by introducing two types of virtual noises. The proposed schemes display high-tech presentation on movie character identification in different genres of movies.

Keywords: Eigen Object Recognizer, video, face detect and recognize, training name, training face, character identification.

1. INTRODUCTION:

The detonation of movie and TV videos content large amount of video data. Which will lead to the need of more efficient techniques for analyzing and organization of video content? Automatic video character annotation is one of such key techniques. Our focus is on identifying & labeling characters with particular name in the movie and TV videos, where this technique is called movie character identification. The objective for our project is to identify the faces of the characters from the video and label them with their names in the name cast. The cast list, script, subtitles and closed caption are regularly unoriginal are known as textual prompts. Fig.1 shows an example in our nature identification.

The characters are the focus for sympathy of safety for the viewers in movies & TV videos. These provide lots of clues about the motion picture construction and comfortable. This method routine character identification is very necessary for semantic film index and content recovery, picture segmentation, summarization and other application such as movie file and retrieval. Fig1: Movie character Identification example the movie spirit identification is a really challenging task in computer sight.

Fig1: Movie character Identification example

The textual cue are softly monitored .The uncertainty problem in establishing the connection between names and faces: the uncertainty can arise from a reaction shot where the person talking may not be shown in the frames 1 and in somewhat labeled frames when there are multiple speakers in the same scene.

The face identification in videos is more complex than that in images as video is sequence of images which are continuously moving. The problems that may arise in the video data are:

Low resolution, b) Occlusion, c) non rigid deformations, d) large motion, e) complex background and f) Uncontrolled conditions make the results of face detection and that of tracking undependable. This brings predictable noises to the movie character identification.

The characters appear quite differently during the movie. The character in the movie may have huge poses; expressions and illumination variations, different wearing at different time in the video, different clothing, even change in makeup and hairstyle.

One movie may contain characters which will go through different age stages, e.g., from child age to youth age & youth age to the old age. For this reason the determination for the number of similar faces from the video is big.

2. PROBLEM STATEMENT:

In this project is used to detect the face of movie characters and recognize the characters and the existing system are taking the too much time to detect the face. But this one can do it in a minute process.

3. MATCHING ALGORITHM:

In this paper proposed a graph matching algorithm called Error Redressing Graph Matching (ECGM) and Principle Component Analysis are introduced. The process of recognition of faces is of four interconnected steps. The procedure begins with detection of face which is followed by normalization. Then the features of the faces are extracted and finally recognition of face is done.

Step 1: Detecting a face for detecting a face, the computer has to decide which pixels in the image are parts of the image and which are not. This is a difficult process for computer than humans especially when the background is filled with many objects.

Step 2: Normalization of faces after the face has been detected, it needs to be normalized i.e. the main landmarks of a face must be positioned accurately and then the images for a little variation are corrected. These corrections are done on the basis of statistical interferences which may not be entirely precise.

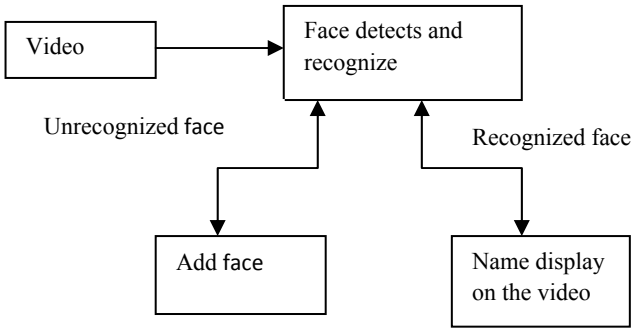
Step 3 and 4: Feature Extraction of faces and Facial Recognition Extracting the facial features is done by a mathematical demonstration which produces a biometric template. This biological reference is then stored in the database and forms the basis of facial recognition tasks. It is necessary for to take the maximum information to make the biometric template unique.

For this purpose, the following algorithms are used

1. EGCM: This is known as Error Correcting Graph Matching Algorithm. It is used for detection of faces and to reduce the noises present in the complicated movie scenes. It defines various graph editing operations as per the noise analysis and

then designs the edit cost function to improve the performance.

2. PCA – Eigen Faces: This Principal Component Analysis technique converts the two dimensional images into a single dimensional vector. Every single component i.e. Eigen face has only one certain feature of the face. This feature may or may be present in the original image. Comparison of a probe image is done with the image in gallery by calculating the distance between their respective vectors. PCA is sensitive to the scale variations. In PCA, the gallery image must be similar to the probe image in terms of poses, illuminations and scales.PCA is a mathematical procedure that uses an orthogonal transformation to convert a set of values of possibly correlated M face images into a set of values of K uncorrelated variables called Eigen faces. The number of Eigen faces is always less than or equal to the number of face images. i.e. K

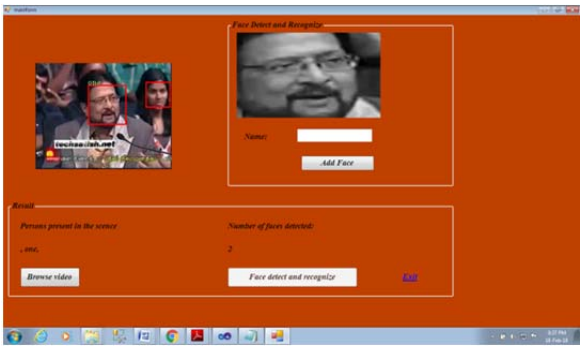


4. Design & Authentication:

In this design method is obtainable to give details the Robust Face-Name Graph Matching for Movie Character Identification. And then how do the plan for face detection and recognition in this paper. The imagery will make clear about the facial fetching details. After that admin is going to login with the details which needed for the login page. Then want to new user enter the face detection page then before enter the details of the new user. Is the information is valid and then enter the face detection and recognition page.

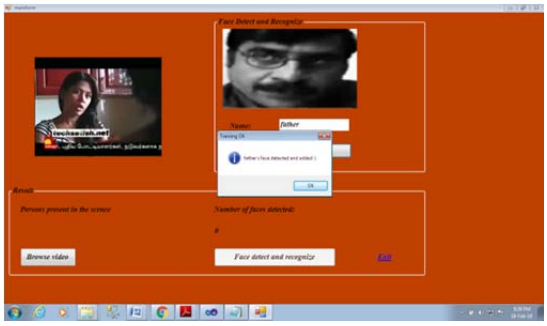
5. Detection:

In this detection are going to detect the face of the movie characters. In this detection are using the emgu cv library we must install the emgu cv library. After installing the emgu cv lib in our project we need to add reference with the name emgu.cv, emgu.cv.util, emgu.cv.ui. When you will complete the references you will get the emgu controls in the toolbox. In my os based I have choose the emgucv-windows-x86 2.2.1.1150 is installed and working. using **C#** and **emgucv**, a .NET wrapper for the Intel OpenCV image-processing library. EmGu libraries can be downloaded at https://sourceforge.net/projects/emgucv/files/. Once downloaded, the package can be installed in a folder of choice. Upon completion, the install folder will become visible like the following; with the **\bin** folder contain the foundation components of the package, i.e. the DLLs that will be referenced in a project. Once the face is detected and then compares the faces of database stored faces. The detected face name is appeared in the result label. The program should perform on single core machines are aware that presentation may be increased by using the sequential edge dispensation method. Look at the "**Improving the detection performance**" section for more details. The x86 source will also run on x64 machines however the x64 source is only for x64 architectures.



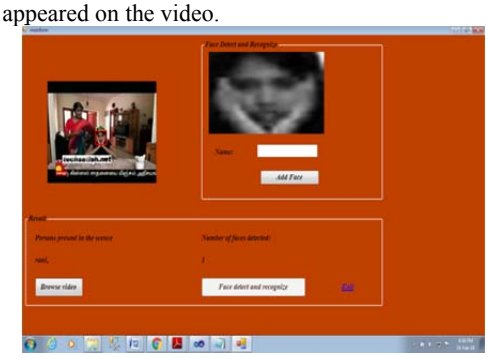
6. Training:

In this phase, train the faces which are detected in the earlier detection phase. The user can train the system by adding the names of the user. The name of the training data set in stored in image format with the graph name. Then the detect face and name are adding database. And then easily identify the person for reentering the video. Then the stored name and face are detected. The training form allows for a face to recognized and added individually as the program is designed to run from a web cam the faces are recognized in the same method. A feature to acquire 10 successful faces classification and adds them all or individual ones to the training data have been integrated. This increase the group of training data and the sum of images acquired be able to live familiar in the Variables region of the *Training Form.cs*. A Classifier Train class is included it has two constructors the evade takes the ordinary folder path of (Application.StartupPath + \\TrainedFaces) which is also the default save location of the training data. If you hope to have dissimilar sets of training data then an additional constructer carries a string containing the training folder.



7. Recognition

In this recognition are going to recognize the face of the movie characters which is previously stored on the face database. In just found that the give the real name of it. This is going to be done here. Here are using with the help of these Eigen Object Recognizer we are going to recognize the face. Recognize the face name is appeared on the video.



8. CONCLUSION

In this paper that the proposed two schemes are valuable to develop outcome for clustering and detection of the face tracks extracted starting uncontrolled movie videos. From the compassion study, and then also publicized that to a number of degree, such schemes have better robustness to the noises in constructing similarity graphs than the established methods. Video labeling is done on a video with the concept explained in the paper. A face is recognized successfully after matching with the image template of the person stored for the first time. Now if the same person appears in that video or any other video, the face will be automatically recognized by the system with a tag to tell who the person is. Implemented concept of video labeling in this paper can have various utilities.

FUTURE WORK:

In the future, we will expand our work to finding the optimal functions for different movie genres.

To identify characters in movies and label faces with their name. Character based video retrieval. Security purpose area

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