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MOVIE CHARACTER IDENTIFICATION USING FACE NAME MATCHING FRAMEWORK

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ABSTRACT

Biometrics plays a vital role in security aspects, common technique in that is movie character recognition. The problem is that the visual appearance of a character if is static we can recognize (no noise) or it in moving state generate noise complex to identify. To overcome this problem we suppose global scheme face-matching based framework with handling graph partition and graph matching. It improves the performance on movie character identification.

Key terms: movie character identification, graph matching, face name-identification framework.

Introduction

In a film, the interactions among the characters resemble them into a relationship network, which makes a film be treated as a small society. In the video, faces can stand for characters and co-occurrence of the faces in a scene can represent an interaction between characters.

In the film script, the spoken lines of different characters appearing in the same scene also represents an interaction.

face track detection:

1. the mouth ROI is located
2. SIFT
3. normalized sum of absolute difference (NSAD)

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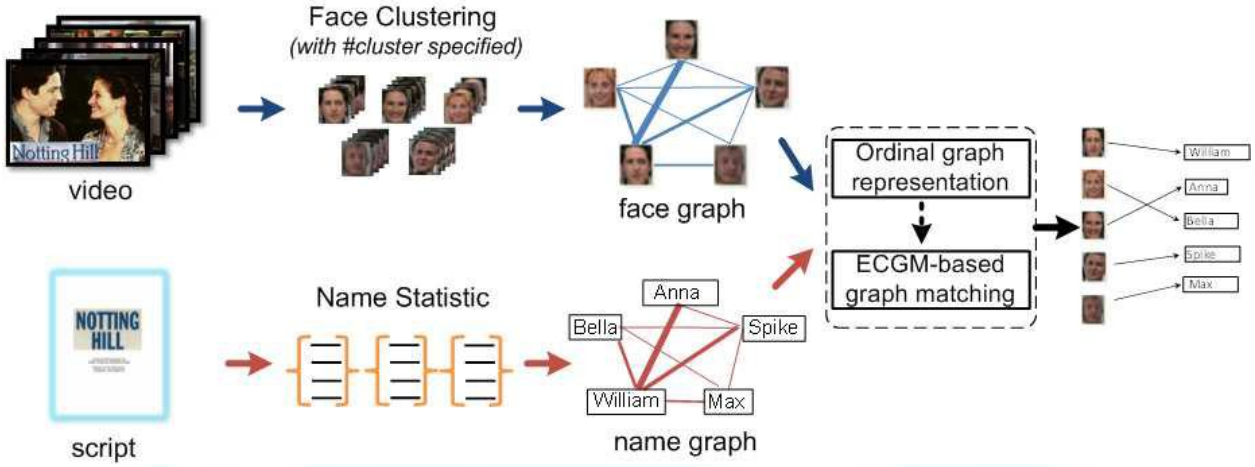
4. if a face track has more than 10% frames labeled as speaking, it will be determined as a speaking



face track (the same person): store face position, scale and the start and end frame number of the track constrained K-Means Clustering:

1. K-Means clustering is performed to group the scatted face tracks.

2. The two face tracks which share the common frames cannot be clustered together.

3. The target number of clusters on face tracks is the same as *K* we set in spectral clustering on the faces.

4. We also ignore those characters whose spoken lines are less than three in the script.

5. To clean the noise from the clustering results, a pruning method is employed in the next step. speaking face track clusters

cluster1 cluster2 cluster3 cluster4 cluster5

FACE-NAME GRAPH MATCHING WITHOUT *ECGM-based Graph Matching*

ECGM is a powerful tool for graph matching with distorted inputs. It has various applications in pattern recognition and computer vision [2]. In order to measure the similarity of two graphs, graph edit operations are defined, such as

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the deletion, insertion and substitution of vertexes and edges. Each of these operations is further assigned a certain cost. The costs are application dependent and usually reflect the likelihood of graph distortions. The more likely a certain distortion is to occur, the smaller is its cost. Through error correcting graph matching, we can define appropriate graph edit operations according to the noise investigation and design the edit cost function to improve the performance.[1]

Ordinal Graph Representation

The name affinity graph and face affinity graph are built based on the co-occurrence relationship. Due to the imperfect face detection and tracking results, the face affinity graph can be seen as a transform from the name affinity graph by affixing noises. We have observed in our investigations that, in the generated affinity matrix some statistic properties of the characters are relatively stable and insensitive to the noises, such as character [1]

EXAMPLES OF FILM CHARACTER SUMMARY

Film name:
Notting Hill
Leading characters:
1 William, 2 Anna
Others:
1 Spike, 2 Max, 3 Bella, 4 Honey, 5 Bernie, 6 Martin, 7 Jeremy, 8 Karen, 9 Thief, 10 Tarquin, 11 Jeff
Dyads:
1{William, Anna}, 2{Max, Bella}
Triads:
1{William, Anna, Spike}, 2{Max, Bella, Bernie}, 3{Jeremy, Karen, Tarquin}
Large cliques:
1{William, Anna, Spike, Honey},
2{William, Anna, Spike, Honey, Max, Bella, Bernie}

Precision/recall curves of face track clustering

$$precision^* = \frac{points\ correctly\ clustered}{total\ points - marginal\ points}$$

$$recall^* = \frac{total\ points - marginal\ points}{total\ points}$$

QUERY EXAMPLES

Query Example	Name	Ordinal
all the scenes of William	William	all
1st scene of William and Anna	William, Anna	1
Max and Bella	Max, Bella	all
last scene of Triad 3	Triad 3	last
2nd scene of large clique 2	large clique 2	2
Thief and dyad 1	Thief, dyad 1	all

Existing model

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 we can do it in a minute process.

Disadvantages

In the previous process the time taken for detecting face is too long in windows processed.

Proposed Approach

In this Robust Face-Name Graph Matching for Movie Character Identification is used to detect the face of movie characters and the Proposed system is taking the minimum time to detect the face. In this one we can do it in a minute process.

Advantages:

In the proposed process the time taken for detecting face in minimum (min) time only in windows processed.

Modules

1. Design & Explain with Login
2. Detection
3. Recognition

1. Login

In this module is going to explain the Robust Face-Name Graph Matching for Movie Character Identification designing and how we did the face detection and recognition in this project. The images will explain about the facial fetching details. After that admin going to login with the details which needed for the login page.

2. Detection

In this module we are going to detect the face of the movie characters. In this module we 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.

3. Recognition

In this module we are going to recognize the face of the movie characters which is we previously stored on the face database. We just found that the give the real name of it. This is going to be done here. Here we

are using the With the help of these eigenObjectRecognizer we are going to recognize the face.

CONCLUSION

Finally we conclude that the graph matching method has been utilized to build name-face association between the name affinity network and the face affinity network. As an application, we have mined the relationship between characters and provided a platform for character-centered film browsing.

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