IMAGE RECOGNITION METHODOLOGY IN VIDEO

Dr. C.Sathiyakumar[1], M.Saranya[2], K.Selvarani[3], P.Vignesh[4]
K.S.Rangasamy College Of Technology, Tiruchengode, Tamilnadu, India[2,3,4]
Professor, B.E- CSE, K.S.Rangasamy College of Technology, Tiruchengode, Tamilnadu, India[1]

Abstract—

Image processing is an active research area, changing and improving constantly. In this methodology, a video is given as input and it collects large number of images from the video. Images with similarity in the video are compared. It identifies and recognizes the given image in the video. It partitions each frame of the matching images to recognize image in video. For each frame in video sequence it first detects the given image in the video. It then partitions all the images in to K-different partitions by K-means algorithm. It computes the look-alike images from the video. It captures variations in pose and expressions of the given image in the video. This technique significantly increases the image recognition and hence, it is an efficient way of identifying the similar images in the video.

In existing system, it compares two videos to get the given input image. The video is converted into frames. For the sequence of frames, large number of images is compared in the video to get the correct result. Each frame is processed as a thread. It performs clustering, fusion of images in the video to get the faces of persons those are present in both the videos. Video-based recognition has also gained lot of traction. In video-based face recognition, a key challenge is using the extra information available in a video; e.g. face, body, and motion identity cues.

In proposed system, the image recognition system is used to capture the images in the video. In the first step the video is scanned. It is used to compare the image in the video. In image recognition system, image is given as the input which is compared with the video. Video is partitioned into many frames. Video frames are processed in parallel manner. The objective of this research reduces the compilation time by processing the frames in parallel and makes it more effect. Similar images are been compared in the video. It performs the fusion of images.

A similar image in the video is scanned to get the correct result. Frames are created after each second. Video is to enhance the computation speed to get the output result in minimum time. In this proposed system, we use K-means algorithm to group the frames that are similar to each other. The K-Means algorithm organizes frames into k partitions.

1. INTRODUCTION

Image processing is a method to convert an image into digital form and perform some operations on it, in order to get an enhanced image or to extract some useful information from it. It is a type of signal dispensation in which input is image, like video frame or photograph and output may be image or characteristics associated with that image. Usually Image Processing

system includes treating images as two dimensional signals while applying already set signal processing methods to them. It is among rapidly growing technologies today, with its applications in various aspects of a business. Image Processing forms core research area within engineering and computer science disciplines too.

The existing system presents a video-based face recognition algorithm that compute a discriminative video signature as an ordered list of still face images from a huge dictionary. In video based face recognition system, it compares two videos to identify the similar images. To yield better face recognition performance across large variations, the existing algorithm utilizes the abundant information available in a video. Therefore, it requires more computational time as compared to still face recognition algorithms.

In proposed system, K-means algorithm is used to compare the similar images in the video.

In K-Means algorithm ,the given intial set is $m_{1.....}m_{k,}$ the algorithm proceeds by alternating between two steps:

Assignment step:

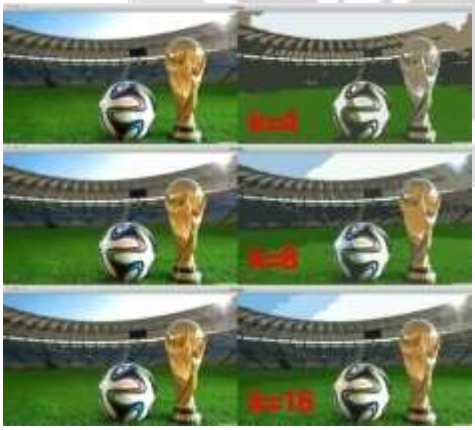
$S_i^{(t)} = \{x: ||x - m|| \leq ||x - \}$

The main goal of our proposed image identification system through video is to enhance the computation speed to get the output result in minimum time.

3. EXPERIMENTAL RESEARCH

4.1 Scanning of Video

The video is scanned and the image is given as the input. In the first step, the buttons are created for each process such as input, output, and for pausing and stopping. The image is selected and given as the input. Video is partitioned into many frames. Frames are created for each second. Video frames are processed in parallel manner. Here we use K means algorithm to group the similar images in the video. The videos are partitioned to k partitions. Similar image is scanned in the video to get the correct result



4.2 Comparing the images of Video

Image is given as the input which is compared with the video. The image recognition system is used to capture the images in the video. An image is been searched from large number of video frames. Here it compares similar images to get the given input image.

No.of input images	No.of recognized Images	No.of non recognized images
4	4	0
6	6	0
8	5	3
10	8	2
13	11	2

Efficiency: 72.35%

Similar images are been compared in the video. A similar image in the video is scanned to get the correct result. For the sequence of frames, large number of images is compared in the video to get the correct result. Each frame is processed as a thread. It performs clustering, fusion of images in the video to get the faces of persons those are present in both the videos. It performs the fusion of images. These Images/Frames are stored in Folder and has same name as of video name Therefore dictionary is a collection of large number of still face images. Hence comparing the similar images for getting the required image is efficient way.

The objective of this research will be to reduce the compilation time of the existing method by using parallel processing of frames in the existing method to make it more effective. To achieve this objective following step is to be performed:

- Step1:Convert the video into frames.
- Step2:Parallely process a video frame by dividing the video frames into four part.
- Step3:Process each frame in a thread.
- Step4:Perform clustering,re-ranking and fusion of images in the video to get the faces of person those are present in the video.

After detecting the image, the feature vector of the face extracted and facial feature is extracted using the following formula:

$$P[j] = \begin{cases} avg[j] & j \in [0,h) \\ ahg[j-h] & j \in [h, j-h+w) \end{cases}$$

Where,

$$avg[i] = \sum_{y=0}^{h} f(i,y) \quad i \in [0,w)$$

and

$$ahg[j] = \sum_{x=0}^{w} f(x,j) \quad j \in [0,h)$$

4.3 Process in the Video

There are 4 processes in the image identification system:

- Begin
- Pause
- Resume
- Stop

Buttons are created for each process for image identification. The image is selected from the video and given as the input one. Video is selected and given as input second. Begin Process is to click the start button. Videos are partitioned into frames. Once the start button is clicked, the similar images in the video are compared. Large numbers of images are compared in the video. Pause button is to pause the video, whereas the resume button is to start the paused video again when the resume button is clicked. When the stop button is clicked, the video is stopped and the image is compared with the several video frames to get the correct result.

CONCLUSION

Recent progress of communication technology and computer science has made video based image recognition to play an essential role in human-machine interface and advanced communication. This describes a survey of video-based image recognition techniques which is used for identification of similar images. Still-to-Still, Video-to-Still based methods only exploit fewer and physiological information of the face but in Image identification methodology has more and plentiful information. In future image identification in video has wide scope and therefore it has to be adopted in real application.

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