

CRICKET VIDEO SUMMARIZATION ON A SPECIFIC PLAYER

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Abstract : A particular person is being found by method of face recognition. Here we are identify specific player from every inning's video and outlining it, for specific action like four and six there are various methods that are applicable for face detection, In this paper we are considering SURF, face detection technique.

I. KEYWORD

Object Detect using SURF, summarize video, identity classified specific cricket player, cricket, Image Processing.

II. Introduction

Video summarization is a process of creating and presenting a meaningful abstract view of entire video within a short span. Main goal of this paper is to scrutinizing entire clip only for specific player to observe specific action like, six, four, out etc. and featuring specific event. World-wide cricket is a second most popular game, after football. There are three worldwide popular formats: Test, One-day and T-20. The game is played within two teams each of them with eleven players [11]. Number of T.V channels airing the cricket video with the complication of making it easier. Manually indexing a large amount of video data is worthless task. These days, demand for efficient video retrieval along with indexing system is evaluated. "Video synthesis methods try to abstract occurrence, main object in a clip to provide a synopsis that is easy to interpret". In recent time, generating a video is time consuming process. Specific situations like film advances, TV episodes and documentary summaries are interesting events in surveillance video.

1. SURF (Speed-Up Robust) features and object detection algorithm by SURF

The SURF selects key features from the database of images along with altered image. This compares the key features of modified image with dataset image. In the descriptor SURF, it has two stages: (I) detector of point of interest as well as (II) descriptor point of interest. The primary stage uses jute matrix to find the approx bearing. The following stage, used vectors feature. Normally, SURF uses 64 dimensions to decline the processing time for comparing and computing. It's a fastest algorithm for object detection.

1.1 Interest Point detector

Hessian matrix, as the base of the detector, for determinant of the approximation is used to identify the interest point, where the determinant is at maximum. In Hessian matrix approximation, integral images are used, which reduce computation time.

Hessian Matrix $H(x; \sigma)$

$$H(x, \sigma) = \begin{bmatrix} L_{xx}(x, \sigma) & L_{xy}(x, \sigma) \\ L_{xy}(x, \sigma) & L_{yy}(x, \sigma) \end{bmatrix}$$

$$\det(H_{approx}) = D_{xx}D_{yy} - (\omega D_{xy})^2$$

1.2 Insert point description

The sum of the haar wavelet response to detailed the feature of an interest is used in the SURF, for identifying descriptor concept of region is used. Each region has four dimensional vectors (V).

$$v = (\sum dx, \sum dy, \sum |dx|, \sum |dy|).$$

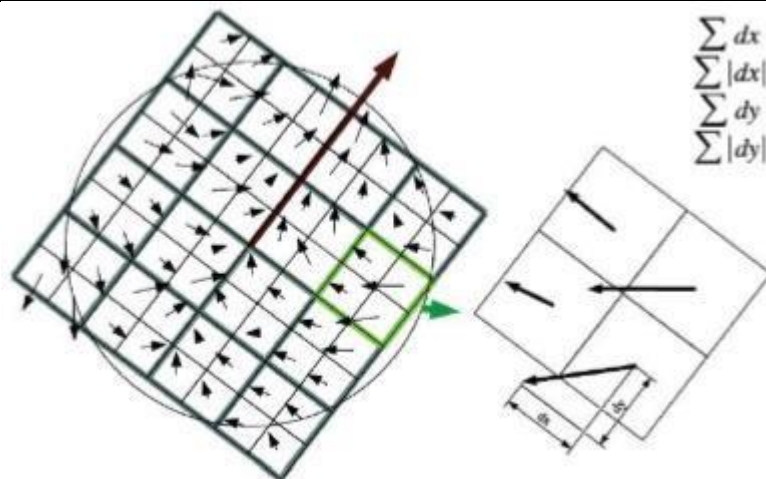


Fig.: The demonstration of descriptor building

2. SURF for object detection

SURF uses two steps, image processing and MATLAB, for object detection: (I) Feature Extraction. (II) Feature Matching.

2.1 SURF Feature Extraction

To bring out the SURF features from images detectors and descriptors are used. First, interest points are identified from each image, after preprocessing. This get resulted into the 30-100 interest point per image. The set of interest points, vector are computed to describe the image.

These features are person-specific, since the number as well as the positions of points.

2.2 SURF Feature Matching

In this, geometric concept of point matching is used to uplift the matching speed and robustness. As in face recognition, images are normalized, the matching point must have same place on the different faces.

Thus for interest point(x, y) in the probe, image, search area is limited within window centered at(x,y) of the gallery. The point matching with minimum distance among descriptors. To verify the validity of the candidate pair ,next minimal pair is searched .If the proportion of this tw0 is equal than matching is confirmed .Since ,location info is introduced in search of minimum distance point pair and the proportion of the minimum distance and next to it measures matching reliability of two interest point effectively. Finally, based on that use perform matching.

Proposed System design

Module and Flow

Step 1:



Fig: Overview of System

Step 2:

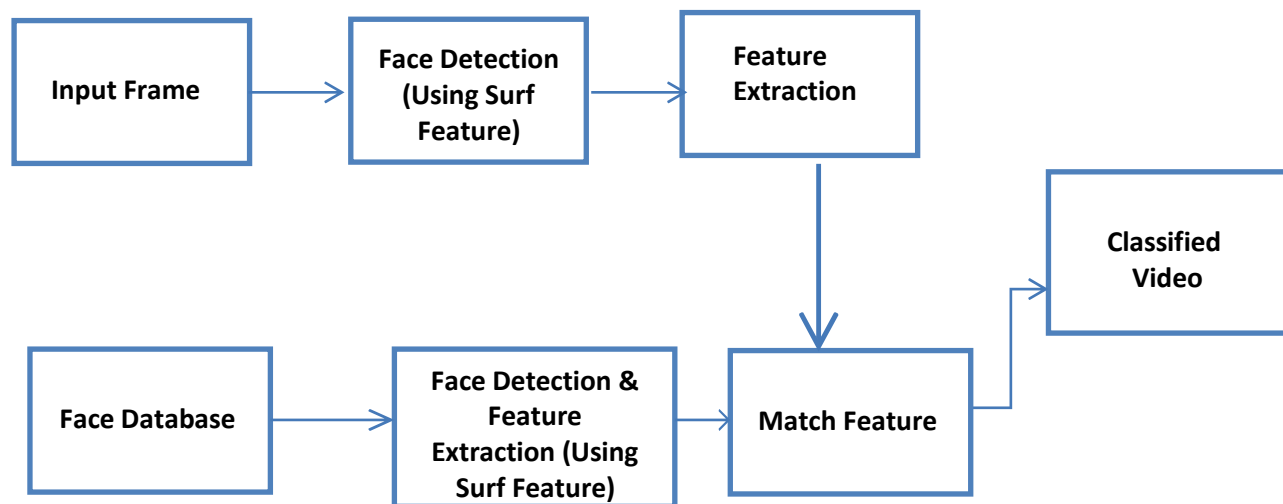


Fig: Face Detection and Reorganization

Implementation:

Pre-Processing

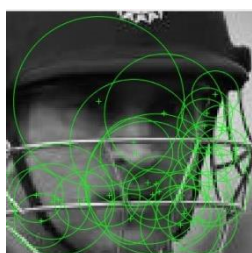
1: Face Detection



Image processing is any type of sign preparing for which the info is a image, for example, a photo or video outline, the yield of Image processing might be either a picture or a lot of qualities or parameters identified with the picture. Image processing typically alludes to computerized Image processing, however optical and simple Image processing is additionally conceivable.

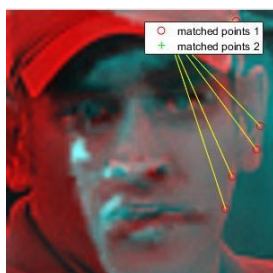
Feature extraction

2: Feature extraction



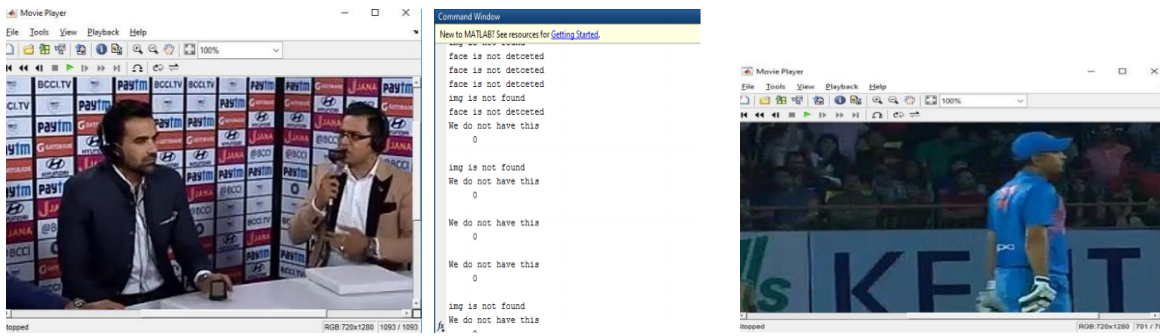
By using MATLAB and SURF algorithm image feature extraction is done.

3: Matching Features



After extracting, image will be go through the data base for Comparing and Matching features. After that resulted into a classified video for specific player in each innings.

4 Classified Video



Conclusion

For long time, face recognition research is a preferable area for many researches, scientists and engineers. So, we are working on most extensible and efficient method for face recognition: SURF functions for facial recognition and detailed comparisons with the characteristics of SIFTS. The experimental outcomes illustrate that the characteristics of SURF have a excellence performance compare to SIFT, However there is a noticeable gain in the speed of coincidence .So that, the characteristics of SURF proved to be adequate for face reorganization.

Future work

In future, rather than referring entire video we can we features like color to identify umpire also indication to make umpire decision than abbreviating whole innings into specific event.

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