Video Information recantation using picture characteristic method

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Abstract: Information withdrawal is one of the art for many researchers, especially extracting the images one of the most inspiring for many investigators nowadays, because the complexity of the data set. Image semantic features, because these features tell how to use the corresponding patterns during the process of editing the video. The video arrangements which is a formal and explicit specification of events. Specifically, an event is combination of Position, period, moving, and image capturing practice. Extracting the similar contentment from the stored data set is called interpretation template. Here, a semantic design is a mixture of little –smooth structures such color, motion and audio. This video arrangement bring the new set of information that not extracted previously.

Keywords: Knowledge extraction, Information retrieval, Image clustering, Data Retrieval, Data comparison, Frame comparison.

1. Introduction
In image processing dynamic video are converted into static frame or picture. This picture helps the user to analyses the various operations based on the user’s requirement. In image processing or image analyze the given dynamic videos are first converted into static frame or picture [1]. After converting into static video each video is treated as one report or one frame. Based on the user’s requirement this individual pictures are joined together to create a complete dynamic video. Quality of this dynamic picture always depends on the user’s skill and user capturing technique. Quality videos always depends on the proficiency. Selecting the needed information from this collection of pictures is called picture mining or picture extraction. [2][3] Extracting or retrieve the particular content from this data set one of the inspiring job to the investigators. Every minute the image content get increased on the web from this situation user need to spend more time to extract the particular content. This work user need to more time because the nature of the data set [4]. Any video model or image model is the
combination of all image attributes such as Hue, motion, intervals between the picture, audio and specific situation of specific backgrounds [5]. The events are modeled to have semantic contents such as location, time, moving(motion) and shooting technique [6]. After this process it is necessary to the researchers to create an key terms for the created data sets. This key terms are used to extracting the information from the relevant group it avoids time taken also bring the more accurate result.

2. Related Work

Maximum of current technology for retrieving the static picture works based on the content available in the stored data set. User need to develop a knowledge on this domain to extract the needed content because this data set differ from the traditional data set. Generating of image data set is possible for many users because of the high resolution mobiles or high resolution camera [7]. Extracting the needed content one of the high challenging task, because of the complexity of the data set. For this researcher need to know the demine first based on his knowledge and expertise retrieve the needed content. Maximum number of technique uses any one of the picture attribute to extract the needed content, this type of techniques works only few image type of data sets. Existing procedure also support only few variety of data sets [8]

2.1 Object detection in image mining:
Finding the relevant picture based on the users input is one of the most importing function in image processing. This task carries multiple steps, because the quality and nature of the image data sets to attain the aforementioned objectives, the following process has been done in the information that is saved in the Database.

- To fast browsing purpose, classify the information based on their specific domain and types etc.
- Grouping the information based on their size, feature, annotation of the information.
- Indexing the huge information, depend on their exact attributes for an instances, videos are indexed depend on their feature.

3. Image Mining

Picture extraction user need to know the input data set then only user can extract the correct and relevant information from the stored data set [9]. For this user need to know the domain knowledge of this data set. Image is the combination of motion, picture closeness, interval, text and more. Based on those properties of the image user try to extract or group the desired image based on his input image. Capturing and storing the images are easy for any un professional users, technology allows the users to catch any type of images same he or she can upload on the web [10]. Due to this particular field grown very rapidly and many unstructured contents are available on the web. This image extraction is used in various applications such as in medical, scientific analysis, weather and forecast analysis, identifying the crime, picture comparison, identified the relevant object and more. Day to day the content gets increased on the grid. From this data sets it is really very difficult to the
user to extract the correct and relevant information due to the characterizes of the input information. Extracting the relevant information user need to go for various image preprocessing steps [11] Image analysis first we need to purify the image data base before the actual process get started.

3.1 Image Mining Algorithm Steps

Picture extraction carried four major steps:

1. **Picture property mining:** Images are made of image characteristics such as motion, time, interval, pixel closeness, different between one picture to other and more. Based on this characteristic the image is divided into frames or shot. Here one shot represents on object [12]

2. **Create an object identifier:** Every pictures are separated by shot or object. After each object are assigned by object reference. This reference helps the users to extract he particular object or classify the object easily.

3. **Create secondary picture:** After assigned the label based on the image characteristics group the objects. It helps to extract the relevant image sets more quickly.

4. **Apply the knowledge extraction procedure:** Based on the users need apply the extraction method to extract the needed data objects.

4. Experimental setup

![Fig 2 proposed Architecture](image)

4.1 Select input video

Technology allows extract information in terms of images. Capture the images are easy to any users but getting the quality image one of the challenging for the user community[13]. Any dynamic vide first converted into static image, from the static image unwanted image set are extracted using image characteristics using image threshold values.

4.2 Convert the dynamic video into static objects

Input vide set converted into static frames or objects. Each picture is treated separately, here picture are differentiated by using image properties or image characteristics. Our proposed system image pixel values are considering. Each separated picture the total RGB values are counted this values helps us to differentiate the one frame with other frame. Based on the frame comparison duplicate object or picture are identified and remove. After removed the duplication information are grouped used for the other processing.
Extracting the picture from the data set in the proposed technique we use image attributes. Using this image attribute every pictures are identified and assigned label for each separated picture. This data sets are stored separately for the additional processes. Each groups are stored separately because of efficient extraction.

**INPUT:** n Divide the input video into images \{P1, P2, P3, … Pn\}

Where Pi is a complete Evidence containing: an picture pd

**OUTPUT:** Set of n Evidence, \{E1, E2, E3,.. En\} Containing the picture label for the descriptors.

For Ei1 -1 ton Do

Ei1=0

END FOR picture_lb=0

FOR a1=1 to n-1 DO

FOR Eb1=1 to Magnitude (Pi.pd)  
Frirst_period=right

FOR b2= a1+1  
IF Ea2.pdj2 is unequal to corresponding yet  
IF alike (Ei1.pdj1, Eb2.pdj2, correspondence inception, THEN  
IF first time THEN  
picture_lable= picture_lable+1  
First time = false  
END IF

Fig. 4 Preprocessing Algorithm

**4.3 Hue extraction**

In most of the image processing hue histograms are used to mine the images on the respiratory. In color image the histogram value calculated based on the intensity of the three basic colors. Use the values of the three basic color user can easily calculate the hue values. It is done through the following simple calculation.

\[
\text{Mean value of basic color1 pixel} = \frac{\text{color1}(s)}{S} \\
\text{Mean value of basic color2 pixel} = \frac{\text{color2}(s)}{S} \\
\text{Mean value of basic color3 pixel} = \frac{\text{color3}(s)}{S}
\]

Here S defined the sum of all pixel in the give picture or frame. Color1(s) defined sum of basic color 1, Color2(s) defined sum of basic color 2, Color3(s) defined sum of basic color 3.
4.4 Picture character extraction

Calculating the picture character assistance, the handler to discriminate the given input picture with other picture. It assists the handler to make discriminate the given set of pictures. This is done with help of image characteristic such as time, interval, pixel closeness, difference between the frame or object, organization of pixel in the given frame based on this characteristic the image is categorized or grouped. Here picture character extraction defines analyze this image characteristic and extract the needed information’s and find the difference between the frames. This helps the researcher which given frame or objects are related.

5. Experimental outcomes

Frames
1) cartoon

2) Globe

Fig 5. Frame conversion

Fig 6. User input image
Table 1: Object type vs object formation in milli sec

| fragment | milliseconds | category |
|----------|--------------|----------|
| 25       | 726          | Cartoon  |
| 50       | 765          | Cartoon  |
| 75       | 786          | Cartoon  |
| 100      | 814          | Cartoon  |
| 125      | 828          | Cartoon  |
| 150      | 860          | Cartoon  |
Conclusion

In the suggested procedure works well in all type of images and it brings the more output based on the input request. Suggest procedure works in different steps: First we are doing the picture property extraction then create a object or label for each picture then apply the knowledge extraction process to extract the correct and relevant information from the stored data set. Among the above all steps the picture property extraction takes long time based on our input video set. Investigational consequences confirm the planned procedure works well compare to the surviving methods.

References

[1] kimiaki shirahama, kazuhisa Iwamoto and Kuniai Uehera,”video data mining: Rhythms in a movie”. Proc.of ICME International Conference on Multimedia and Expo (ICME), 1463-1466.
[2] Parsons, E.Haque and H.Liu,”Subspace clustering for high dimensional data. A review”, ACM SIGKDD Explorations Newsletter, 6(1):90-105.
[3] Saravanan” Efficient Video indexing and retrieval using hierarchical clustering techniques”, Advances in Intelligence systems and computing, Volume 712, Pages 1-8, ISBN:978-981-10-8227,6, Nov-2018.
[4] R.Nevatia, J.Hobbas and B.Bolles,”Ontology for video event representation”, in proc.of CVPRW 2004(vol.7), 119, 2004.
[5] D.Saravanan” Effective Video Data Retrieval Using Image Key frame selection”, Advances in Intelligent Systems and computing, Pages 145-155,Jan-2017.
[6] S. Vaithyasubramanian, K. Vengatakrishnan, C. K Kirubhashankar and R. Delhi Babu (2020). “Optimization using majority selection process in identifying missing links in green cloud and internet exchange” Journal of Green Engineering, Vol. 10, Issue 3, Pp. 1193-1207
[7] M.Bertini, A.Bimbo and C.Tomai.,”Enhanced ontology’s for video annotation and retrieval”, In Proc. Of MIR 2005, 89-96.
[8] D.Saravanan,”Clustering the irregularity events in intelligence surrounding systems”, Int. Journal of pure and applied mathematics. 2018; Vol. 119, No.12(2018), 15025-15035.
[9] Carlos Ordonez and Edward Omiecinski,” Image mining : A new Approach for Datamining”,In Proc. Of ICADL 1998, 22-42.
[10] A. Christy, S. Vaithyasubramanian, A. Jesudoss and M. A. Praveena (2020). “Multimodal speech emotion recognition and classification using convolutional neural network techniques” International Journal of Speech Technology, Vol. 23, Issue 2, Pp. 381-388
[11] D.Saravanan,Dr. Dennis Joseph,”Image data extraction using image similarities”,Lecture notes in Electrical engineering. 2018; Volume 521, 409-420.
[12] R. Agrawal and R.Srikant,”Fast Algorithms for mining association rules in large database”, In Proc.of the 20th International Conference on Very Large Data Bases, Chile, 1997; 487-499.
[13] D.Saravanan,” Efficient video indexing and retrieval using hierarchical clustering Techniques”, Advances in Intelligence systems and computing. 2018; Volume 712, 1-8.