Extracting image frames using image property matching technique

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Abstract Retrieve the needed content based on the users input query one of the challenging task today especially the input if it is image. This extraction procedure be different compare to the existing retrieve operation. In image data extraction user need to know the input field, based on his knowledge only the extraction take place because the complexity of the input data set. The given visual picture converted into meaningful static picture after eliminating the unwanted information from the data set then only user need to extract the needed information. This brings the huge demand in this field. In the proposed article focus the drawback on the existing technique and provide the efficient model for extracting the needed information. The investigation outcome verifies this statement.

Keywords: Knowledge extraction, Information retrieval, Picture comparison, Mean pixel, Threshold value, Frame height, Data extraction.

1. Introduction
Modern world permits the user to extracting the content either text based or image based. Today technology and tools allows the users extracting image based information more easily and efficiently. Creating of this image database is very easy for many users, but extracting the need content from the stored database one of the key challenging for many researchers. Any un trained user can easily create the image sources or user can easily have downloaded the image source from the web. Quality of the downloaded information one of the big challenging factor. Compare to the text data’s image data’s having lot of impurities, before extracting the needed content first the source need to cleaned, then user may get the efficient data from the source. Today this image based extracting are used almost every field, such as climate analysis, geographical analysis, result comparison, medical diagnostics, nature change, identifying new feature and more [1]. In above all areas the huge amount of image data sources is collected for creating the image database. This database never gives any guarantee about the
source, the source may contain lot of impurities, repeated data set, uncomplete data and more. Any researcher it is most important first the source need to clean and contain high quality data [2]. Day to day the data source gets increased it creates interest on many researchers also the challenge involved here not only extracting the need content also bring the quality data with high efficiency. Lot of tools and procedure available today to extract the needed content but still an improvements and accurate tool is required to extract the image data’s. Image is the combination of pixels, time interval between one picture to other picture, data availability on the frame, total number of pixel, density of the pixel and other image attributes are used for the researchers to extract the particular content or particular video from the data source [3]. New procedures and tools helps the users to extract their content more accurately and more quickly. This efficient extracted data used in many areas like preparation, many models, analysis and more. Creating the image data is not an easy task for many researchers because every second on web hug amount of image data are added. So it necessary to many researchers at regular interval they need to clean or process the dataset. Any image mining or image analysis require image preprocessing steps, it helps the user extract the need content and also reduce the searching time [4]

Image mining or video data mining research require pre request knowledge on the specific domain because of the data source. The given data source is the combination of two or more attributes. It is necessary to the researchers must have domain knowledge. The processing done in various steps. In step on image data preprocessing is required, user or researcher need to know which data is unwanted which data source required for analysis. Most important and channeling task during the preprocessing step the quality of the data may retain. After the preprocessing the next researcher need to understand the available input data set based on the input only we can get the quality output. After extracting the correct information using the proper procedure. Finally, the extracted information present in the proper format to the end user [5]. In the proposed technique the dynamic inputs are converted into static after any noise sources are identified and eliminated using image attribute comparison technique. Cleaned data then stored separately for future operation. Based on the user input query frame matching or image matching technique information’s are extracted [6]

2. Existing system
Video clustering has some kind of variations with conventional clustering algorithms. As mentioned previously, because of unstructured, the computer vision and image processing technique used for preprocessing of video data to obtain features in structured formats. In video clustering, one more variation is the time that must be considered on video processing. Often the video is a synchronized data of both audio and visual information in time. A perfect tracker must have ability to overcome the problems mentioned above by implementing exact limitations on motion and appearance of object. [7]

2.1 Drawback of existing System
1. More complex operations.
2. No image preprocessing steps.
3. Image attributes are not properly uses.
4. Supports specific type of input only.
5. High time consuming
6. Searching time increased.
7. Very few outputs only generated.

3. Proposed System
Suggested technique’s works in two step process. The first process trained the input file it is done on the client or user side. Before the actual process get started input need to trained based on the user’s
requirement. Training the database helps the user to extract the needed information more quickly and bring more number of matching information. The second step server side or host side. This side all matching process take place based on the user input [8]. Before the actual process the proposed technique used spend some time for this two-step process it helps the user brings the more accurate and more efficient data retrieval. The suggested technique given dynamic picture are first converted into static picture. Using image attributes the unwanted or errored information’s are removed. Investigational outputs verified the proposed technique work well in more number of input files [9]

3.1 Advantage of proposed Technique
1. Improved Searching time.
2. Complexity get reduced.
3. More image attributes are used.
4. More number of image groups are created; it brings accurate Result.
5. Duplicate elimination process works well.
6. Suitable for many input files.

4. Investigational Arrangements

4.1 Visual picture extraction
Extracting the new information or new inferences from the data source is called data extraction or knowledge extraction. This output is unknown to the researchers or users before the process get started. Every time the user use to get new knowledge for the same query. Especially the visual picture processing user need to go for preprocessing step because of the complexity of the give data set. The proposed visual picture extraction process shown in the figure 1. In the proposed technique the visual input first converted into static for effective image operation. After the unwanted and uncomplete sources are removed through the processing function. After the cleaned data source are stored in the data based for the future operation for extracting the domain knowledge.

![Figure 1. Proposed Image picture matching Architecture](image-url)
4.2 Most commonly used techniques in data mining are

4.2.1 Grouping
Number of data mining technique used to extract the domain knowledge among this classification is the one which produce the domain knowledge based on the inferences derived by the user. This technique one of the most complex technique used for discovering domain knowledge. It works based on the collected of various domain attributes and derive the inferences based on the problem domain.

4.2.2 Connotation
Association works based on the correlation between the attribute set. It works well based on the past event occurrence. Based on the track or based on the similar event the output or classification are take place.

4.2.3 Decision Graph:
Here data are classified into graph structure. Each input are represented in a root outcomes of the roots are treated as the solution. Each step two type of possibilities are tested based on the result information’s are classified.

4.2.4 Ungroup source discovery
Data mining not only used for grouping the input data, it also identifies which data not suitable for the give data set. This helps the user to identified the unwanted or erred data in the give set.

4.2.5 Expectation
It is one of the most valuable technique used in data mining extracting the domain knowledge in the give data sets. It helps the users expected outcome based on past experience or based on the inference specified by the user. Normally this inferences are obtained based on the ancient information.

4.3 Visual picture grouping
Assembling the similar information as group one of the most important task in image preprocessing step, this helps the user to extract the needed information on minimal search also bring the output more effectively. Grouping is one of the important task, information or data which are similar they are all kept in one group, information or data which is not similar they are all kept it other groups. This groups are created based on the property of the image picture. In the proposed technique RGB threshold value is used to identify the similarity between the frames. User first initiate the maximum threshold value after every picture mean pixel value is calculated this value is compare against the maximum threshold values if the value are similar the it is treated as similar frame or picture that is removed from the data set. If the value higher than the maximum threshold value are treated as separate frame they are all grouped separately. By this value every picture values are compare with the static picture and the duplicates are eliminated from the data set. This works are indicated in the fig 2,3,4 and Table 1.

Procedure for picture matching

Input: Visual picture
Output: Group of picture

Procedure for find the duplicate

Sum of A=0 picture elevation
Sum of B=0 picture breadth
Pigment picture = pixel (A,B)

Picture = (#FF0000 * PigmentPixel.R) + (#00FF00 * pigmentPixel.G) + (+0000FF * pigmentPixel.B)

Pic = sum(Picture)

Picture value= Picture1. Picture value – Picture2.picturevalue
If picture value < Threshold value
Print “Duplicate picture”
Else
Compare= picture2.picturevalue- picture2.picturevalue until
All picture are compare and eliminate the duplicate from the data set.

4.4 Visual picture Classification
After the duplicate picture are eliminated from the data set , remaining picture are grouped for the further process, this data set is stored separately. The next step is creating the visual picture identifier for grouping pictures. Remaining all picture are assigned proper label for easy access. This steps helps the user to extract the needed content easily also reduces the time take for the extraction process [12]

5. Image extraction

Usage of image files are increased day to day. On web every one minute approximately 404,444 video streams are uploaded take place, on you tube 400 hours of videos are uploaded by the various users approximately 347222 image stories create by the different user on Instagram. All this data is clearly indicating how much image data are uploaded on the web during the 60 sec time duration. From this huge data set it is challenging task to the user to extract the needed content of information’s. In any image processing user first consider the input image query, how the input picture match with the trained image data set. [13]. Image extraction process are differing from our traditional text extraction or any other knowledge extraction process. Image extraction always require client side operation and server side operation. Before the actual extraction process required training operation based on the trained data set further operations are carried. This process is shown in the fig 5 and fig 6.

5.1 Image Mining Algorithm Steps
Any image mining first it need to perform the image preprocessing steps it helps the user to remove the unwanted information’s present in the image data base. So that user retrieval process gets improved and user will get more effective output during the extraction time. Image preprocessing is one of the complex process because of the image data it is the combination of three or five image attributes so is difficult to the researcher remove the unwanted image attributes without affecting the quality of the image. After removed the error it is necessary to combine the remaining data set for the further operations. Based on this complexity image mining process divided in to four major steps in each step the quality of the image gets improved.

Step 1: Conversion of Static picture: The given input image is dynamic in nature; it is difficult to the user process the dynamic image. It is necessary the dynamic picture first converted into static picture for further image mining process. Given input are converted into meaningful static picture or static frame.
Step2: Assign proper identifier: After successful conversion of static picture using image frame matching technique the unwanted picture or uncomplete picture are removed. After removing those picture from the sequence, a new image sequence or image identifier are created for the rest of the picture. It helps the user to retrieve the correct needed information from the image data base.
Step 3: Creation of trained data set: In image processing it is necessary before the actual process image picture are trained and stored. It reduces the searching time and improve the image retrieval efficiency.

Step 4: The above all three steps are repeated until all static pictures are properly assigned a label.

6. Investigation outcomes

Fig. 2. Dynamic picture converted into static pictures

Fig. 3. Video data converted into frames.

Fig. 4. Segmented data grouped.
Fig 5. Output of image group for different input file.

TABLE 1. Output of image group Vs Interval occupied

| Image count | Interval occupied | category |
|-------------|-------------------|----------|
| 25          | 2678              | Cartoon  |
| 50          | 2680              | Cartoon  |
| 75          | 2640              | Cartoon  |
| 100         | 3052              | Cartoon  |
| 125         | 3385              | Cartoon  |
| 150         | 3678              | Cartoon  |

TABLE 2. Static Image Vs Interval occupied

| Static Image count | Interval occupied | category |
|--------------------|-------------------|----------|
| 25                 | 2678              | Cartoon  |
| 50                 | 2680              | Cartoon  |
| 75                 | 2640              | Cartoon  |
| 100                | 3052              | Cartoon  |
| 125                | 3385              | Cartoon  |
| 150                | 3678              | Cartoon  |
Fig 7. Performance graph of investigation output

7. Conclusion

Image extraction is one of the very dominate field research for many researchers because of the increasing the demand and increasing its popularity. This extraction helps the researchers to bring the needed content more accurately and more efficiently. The proposed work proofs the working model works well in all type of video files, and bring more accurate result compare to the existing technique. In future this works improved with other image attributes and bring more efficient results.

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