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# Method of Image Clustering and Retrieving Using Image Mining Technique

Kiran P. Khandare
Dept. of computer science and Engineering
DES'S COET Dhamangaon Railway,
Amravati, India

Swati V. Kamble
Dept. of computer science and Engineering
DES'S COET Dhamangaon Railway,
Amravati, India

Shivani R. Jaiswal
Dept. of computer science and Engineering
DES'S COET Dhamangaon Railway,
Amravati, India

Nutan P. Khelkar
Dept. of computer science and Engineering
DES'S COET Dhamangaon Railway,
Amravati, India

***Abstract*** *– Contest based image retrieval is popular image retrieval system by which the target image to be retrieved based on the useful features of the given image. In other end, image mining is the arising concept which can be used to extract potential information from the general collection of image. Target or closed image can be retrieved in a little fast if it is clustered in the right manner. Content based image retrieval (CBIR) is widely expected technique for searching image from large and unlabeled image databases. But users are not satisfied with the traditional information retrieval technique, because the network and development of multimedia technologies are becoming more popular. So content based image(CBIR) are becoming a source of accurate and efficient retrieval.*

***Keywords- Content based image retrieval, RGB components, texture****.*

## INTRODUCTION

In this present scenario, image can be play a vital role in every aspect of business such as business image, medical image, satellite image and so on. If we can analysis these data, which can reveal useful information to the human users. But unfortunately there are certain difficulties to gather those data in a right way, due the incompletion of data, the information gathered is not processed further for any conclusion.

In another end, image is the very fast growing and challenging research area with regard to both still and moving image. Many of Content Based Image Retrieval (CBIR) system prototype have been proposed and few are used as commercial system. CBIR has aims at searching database for specific image databases for specific images that are similar to a given query image. It is also focuses at developing new technique similar to a given query image. It is also focuses at developing new technique that support effective searching and browsing of large digital image libraries which can be based on automatically derived imagery features. It is rapidly expanding research area situated at the intersection of database, information retrieval, and computer vision. Although the CBIR is still immature, there has been a abounded of the prior work.

## METHOLOGY

This section discuss about the proposed system architecture and the method to mining data.

### 3.1 *CBIR architecture*

Content Based Image Retrieval (CBIR) plays an indispensable role in the field of image processing. CBIR is used for automatic ranking and retrieval of images depending upon features of images. The features

may be low level such as color, texture and shape or High level such as specific content of image. The high level feature depicts the need of user. A Single feature can correspond to only part of the image property. Because of this, multiple features are used to improve the image retrieval process

Content-based image retrieval (CBIR), also known as query by image content (QBIC) is the application of computer vision techniques to image retrieval problem, that is, problem of searching for digital images in large databases [2]. It aims to finding images of interest from a large image database using the visual content of the images.

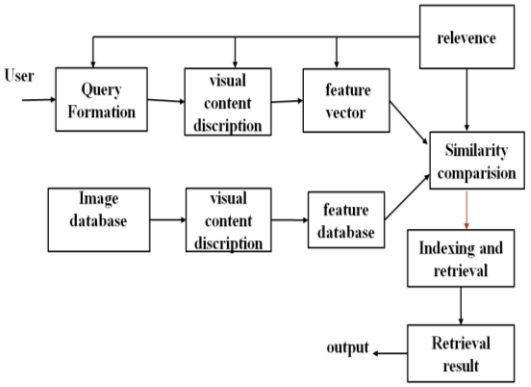


Fig.3.1 Typical Architecture of Content Based Image Retrieval System

"Content based" means that the search will analyze the actual contents of the image rather than the metadata such as keywords, tags, and/or descriptions associated with the image. The term 'content' in this context might refer to colors, shapes, textures, or any other information that can be derived from the image itself [3]. In on-line image retrieval, the user can submit a query example to the retrieval system to search for desired images. The system represents this example with a feature vector and the distances (i.e., similarities) between the feature vectors of the query example and those of the image in the feature database are then computed and ranked. Retrieval is done by applying an indexing scheme to provide an efficient way of searching the image database. Finally, the system ranks the search results and then returns the results that are most similar to the query examples.

*3.2 Simple clustering: k-means:*

Basic version works with numeric data only

1. Pick a number (K) of cluster centers-centroids(at random)
2. Assign every item to its nearest cluster center (e.g. using Euclidean distance)
3. Move each cluster center to the mean of its assigned items
4. Repeat steps 2,3 until convergence (change in cluster assignments less than a threshold)

*3.2.1 illustrating k-means:*

To search for an image user may provide query terms such as keyword, image file/link, or click on some image, and the system will return images "similar" to the query. The similarity used for search criteria could be meta tags, color distribution in images, region/shape attributes, etc. in text-based image retrieval system images are manually annotated by text-based keywords, when we query by a keyword instead of looking into the contents of the image, this system matches the query to the keywords present in the database. It seems to be difficult to manually annotate them from a huge collection of image database. And the feature present in image cannot be describe by keyword completely and thus new technique has been evolved it is called Content-Based Image Retrieval. This technique used the visual content like color, texture, shape to retrieve the image from a huge collection of database. It is a time consuming process to search a given image from large collection to over come this problem we use k-means clustering technique to form a clusters or a groups of images having a similar feature and continue to get the desired image. In this paper we use color as visual feature for searching an image. Color is one of the most widely used features for image similarity retrieval, Color retrieval yields the best results, in that the computer results of color similarity are similar to those derived by a human visual system that is capable of differentiating between infinitely large numbers of colors. One of the main aspects of color feature extraction is the choice of a color space. A color space is a multidimensional space in which the different dimensions represent the different components of color. Most color spaces are three dimensional. Example of color space is RGB, which assigns to each pixel a three element vector giving the color intensities of the three.

## CONCLUSION

The main objective of the image mining is to remove the data loss and extracting the meaningful information to the human expected needs. The images are preprocessed with various techniques and the texture calculation is highly focused. Here, images are clustered based on RGB Components, Texture values and Fuzzy C

mean algorithm. Entropy is used to compare the images with some threshold constraints. This application can be used in future to classify the medical images in order to diagnose the right disease verified earlier.

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