**CONTENT BASED IMAGE RETRIEVAL**

**LITERATURE SURVEY**

**Abstract:**

Literature survey is most for understanding and gaining much more knowledge about specific area of subject. In this paper a survey on Content Based Image Retrieval (CBIR) is a technique which uses visual features of image such as colour, shape, texture, etc…to search user required image from large image database according to user’s requests in the form of a query image. CBIR is fast growing technology and as databases are increasing due to latest developments in multimedia, it becomes extremely important to develop this technology to meet user interests. This paper is a survey on the features and intends to give an insight into how these features are extracted.

**Introduction:**

Content-based image retrieval (CBIR) (Dutta et al, 2008) has become a prominent research topic because of the proliferation of video and image data in digital form. In present times, the quick advancement of the private networks, the Internet as well as the expansion of multimedia technologies, numerous digital images are posted day-afterday. The massive amount of images has presented growing concerns regarding computer systems in order to handle and save data efficiently as well as proficiently. The implementation of biggest image databases with regard to great diversity of applications has at present grown to be doable. Even the databases of medical imagery as well as satellite have now been encouraging an increasing number of consumers in a variety of professional areas (Lee et al., 1998). Bingo, Google, and Yahoo are the old and well-recognized searching techniques and these techniques depend on the textual annotation of graphics in which images are annotated manually with keywords and after that extracted making use of text base search tactics that makes the systems performance less satisfactory.

Therefore, we require newer methods. It is now becoming a necessity to effectively access the required images from within a varied and huge image database. Quite consumers aren’t content with the standard text-based retrieval techniques. Content-Based Image Retrieval is a method which assists to get at and organize the digital images within the large assortment of databases by utilizing the features of the images. The purpose of content-based Image retrieval is to overlook the utilization of textual information. CBIR is unquestionably an approach designed to alleviate the data management plus the user has the ability to access the data easily. Subsequently in content-based image retrieval, the extraction of an image in accordance with similarities in their features such as colors, textures, shapes and such like. The CBIR has become necessary as the majority of web-based image search engines depend entirely on metadata so this generates lots of false detection in the outcomes (Veltkamp et al., 2002) (Kekre et al., 2010) (Banuchitra et al., 2016).

**The study of few literatures on use of CBIR is as below.**

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**Image Retrieval based on the Combination of Color Histogram and Color Moment**

**Publications:** International Journal of Computer Applications (0975 – 8887) Volume 58– No.3, November 2012.

**Abstract:** A novel technique for Content based image retrieval (CBIR) that employs color histogram and color moment of images is proposed. The color histogram has the advantages of rotation and translation invariance and it has the disadvantages of lack of spatial information. In this paper, to improve the retrieval accuracy, a content-based image retrieval method is proposed in which color histogram and color moment feature vectors are combined. For color moment, to improve the discriminating power of color indexing techniques, a minimal amount of spatial information is encoded in the color index by dividing the image horizontally into three equal nonoverlapping regions. The three moments (mean, variance and skewness) are extracted from each region (in this case three regions), for all the color channels. Thus, for a HSV color space, 27 floating point numbers are used for indexing. The HSV (16, 4, 4) quantization scheme has been adopted for color histogram and an image is represented by a vector of 256-dimension. Weights are assigned to each feature respectively and calculate the similarity with combined features of color histogram and color moment using Histogram intersection distance and Euclidean distance as similarity measures. Experimental results show that the proposed method has higher retrieval accuracy in terms of precision than other conventional methods combining color histogram and color moments based on global features approach.

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**Content Based Image Retrieval (CBIR) in Remote Clinical Diagnosis and Healthcare**

**Abstract:** Content-Based Image Retrieval (CBIR) locates, retrieves and displays images alike to one given as a query, using a set of features. It demands accessible data in medical archives and from medical equipment, to infer meaning after some processing. A problem similar in some sense to the target image can aid clinicians. CBIR complements text-based retrieval and improves evidence-based diagnosis, administration, teaching, and research in healthcare. It facilitates visual/automatic diagnosis and decision-making in real-time remote consultation/screening, store-and-forward tests, home care assistance and overall patient surveillance. Metrics help comparing visual data and improve diagnostic. Specially designed architectures can benefit from the application scenario. CBIR use calls for file storage standardization, querying procedures, efficient image transmission, realistic databases, global availability, access simplicity, and Internet-based structures. This chapter recommends important and complex aspects required to handle visual content in healthcare.

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**Beginners to Content Based Image Retrieval**

**Publisher:** International Journal of Scientific Research Engineering &Technology (IJSRET).

**Abstract:** This paper gives an overview idea of retrieving images from a large database. CBIR is used for automatic indexing and retrieval of images depending upon contents of images known as features. The features may be low level or High level. The low level features include color, texture and shape. The high level feature describes the concept of human brain. The difference between low level features extracted from images and the high level information need of the user known as semantic gap. A Single feature can represent only part of the image property. So multiple features are used to enhance the image retrieval process. This paper has used color histogram, color mean, color structure descriptor and texture for feature extraction. The feature matching procedure is based on their Euclidean distance.

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**Content-Based Image Retrieval**

**Publisher:** Masooma Zahra, Department of Computer Science, Bahria University, Islamabad.

**Abstract:** In the digital image processing research areas the content-based image retrieval (CBIR) becomes the most significant research field as this is the latest and the fastest method for retrieving the information. The content-based image retrieval is a new method that extracts images based on the features extracted automatically including the texture, color, and the shape of the image. It addresses image retrieval implementing multidimensional indexing, visual feature retrieval, and also the retrieval system design. In the past several years, there are various techniques produced for content-based image retrieval. The objective of this paper is to classify the content-based image retrieval applications and techniques and an upgraded introduction to several content-based image retrieval systems is presented. Because the quantity of literature provided in the area is extensive, primarily some of the works are listed.

**Conclusion:**

In recent years, the quantity of the digital image collection is growing rapidly due to the development of the internet and the availability of image capturing procedures and devices. The problem appears when retrieving these images from storage media. Thus, image retrieval systems become efficient tools for managing large image databases. A content based image retrieval system allows the user to present a query image in order to retrieve images stored in the database according to their similarity to the query image. In this research, we have proposed a method for retrieval using the color, texture and shape feature of an image. The method used to extract the grey level feature is the histogram approach, and the color moments of the color distribution were calculated from the images and used as color descriptor. For texture features, we use Gabor Filter which is a powerful texture extraction technique in describing the content of image. The Canny’s edge detection approach is used to extract the shape feature vector. To find the similarity between the images the Euclidean distance is used. The images are ranked according to the similarity value by using the sorting algorithm. To evaluated the performance of system, we used precision in retrieving the images. The efficiency of the system is improved through extraction of the feature color, texture, and shape and integrating them in one feature vector then calculate the similarity between the images. The final similarity value is computed between the images after the assignment of the weights to the different features.

The experimental results showed that the proposed system has increased the average precision - retrieval accuracy - to 56%. This is better than the 36% result reported by other systems which combine these three features without weight assignment.

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