**Literature Survey**

Image databases, once an expensive proportion, in terms of space, cost and time has now become a reality (Dr. Ramprasad Bala). These databases can be searched interactively, based on image content and or by indexed key words. Content-based image retrieval (CBIR), also known as query by image content (QBIC) and content-based visual information retrieval (CBVIR) is the application of [computer vision](http://en.wikipedia.org/wiki/Computer_vision) techniques to the [image retrieval](http://en.wikipedia.org/wiki/Image_retrieval) problem, that is, the problem of searching for [digital images](http://en.wikipedia.org/wiki/Digital_image) in large [databases](http://en.wikipedia.org/wiki/Database) (

[http://en.wikipedia.org/wiki/Content-based\_image\_retrieval).](http://en.wikipedia.org/wiki/Content-based_image_retrieval).CBIR)

[CBIR](http://en.wikipedia.org/wiki/Content-based_image_retrieval).CBIR) is a technique for retrieving images on the basis of automatically-derived features such as colour, texture and shape (John Eakins & Margaret Graham, 1999).According to John and Margret, while the requirements of image users can vary considerably, it can be useful to characterize image queries into three levels of abstraction: *primitive* features such as colour or shape, *logical* features such as the identity of objects shown and *abstract* attributes such as the significance of the scenes depicted. CBIR operates on a totally different principle from keyword indexing. Primitive features characterizing image content, such as colour, texture, and shape, are computed for both stored and query images, and used to identify (say) the 1000 stored images most closely matching the query (John Eakins & Margaret Graham, 1999).

Content-based image retrieval (CBIR) systems demonstrate excellent performance at computing low-level features from pixel representations but its output does not reflect the overall desire of the user (Michael Eziashi Osadebey, 2006). The systems perform poorly in extracting high-level (semantic) features that include objects and their meanings, actions and feelings. This phenomenon, referred to as the semantic gap, has necessitated current research in CBIR systems towards retrieving images by the type of object or scene depicted. Analyzing and interpretation of image data in large and diverse image database, as in a CBIR system is obviously difficult because there is no prior information on the size or scale of individual structures within the images to be analyzed (Michael Eziashi Osadebey, 2006). Michael Eziashi Osadebey used the methodology as depicted in Figure 1. Current and most CBIR systems focus on colour as primary feature for retrieval. In the thesis by Michael Eziashi Osadebey colour is de-emphasized. Focus is on texture as primary feature. Shape and spatial information were secondary features. This can have varied applications such as the police who maintain an image database of criminals, crime scenes can search for the clues using shape and spatial information of the images in the database. Similarly it can also be used in medical profession, architectural and engineering design etc.



Figure 1

Content-based image retrieval (CBIR) is an important research area for manipulating large amount of image databases and archives and extraction of invariant features is the basis of CBIR (K Naresh Babu et. al. / International Journal of Engineering Science and Technology Vol. 2(9), 2010, 4278-4287). This paper focuses on the problem of texture, color & shape feature extractions. Using just one feature information for comparing images may cause inaccuracy than compared with using more than one features. Therefore many image retrieval system use many feature information like color, shape and other features. K Naresh Babu et. al. have used three features for image Retrieval like color, shape & texture Feature , HSI color information especially Hue value and CSS (Curvature Scale Space) as shape information.

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Figure 2

Figure 2 demonstrates the methodology used by K Naresh Babu et. al.. This project was carried out in 4 steps namely, pre-processing, extract of feature, store information of Image and retrieval the Image. CSS (Curvature Scale Space) and HSI (Hue, Saturation and Intensity) have been used to extract the feature points. On pre-processing, implement the Image processing for next step. Extract the RGB of pixel color information for color feature and the gray-level of pixel information for shape feature. On extract of feature, can extract feature of visual, this is retrieval. This is consisting of vector of feature that base on the retrieval similarity measure from color and shape. Extract process of color information show up the progress that transfers from original image data RGB value to HSI value (as there is the flexibility to represent in the 2-D format). On extract of shape, one of step for can get the CSS Image, extract edge after transfer inputted color image to gray-level (to eliminate high intensity values and deviation of the shape). Here every object is represented in x and y coordinates of its boundary (binary images) points. Obtain the CSS image after extract contour by progress of contour tracking (smoothening of edges) then, remove the noise by clustering (technique for statistical data analysis used to extract meaningful information). On storage information of image, efficiently

can be storage and management the feature information of image and, store the vector and linked image file though the indexing progress on an image. Then, as last step, retrieval progress of image and measurement of similarity, extract and show up the best of quality. For example, user query by example image to here, first time extract maxima coordinates value store from between vector of feature and image database then, compare the vector with the CSS image of query image. After output the image follow the top priority.