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A Review on Procedures on Design and Development of Framework for Content Based Image Retrieval

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Abstract: ***Digital Image Databases and documentation provide lot of research areas. Significant among them is, The Content Based Image Retrieval (CBIR) research area for manipulating large amount of image databases and archives. The development in the field of medical imaging system has lead industries to conceptualize a complete automated system for the medical procedures, diagnosis, treatment and prediction. There is a continuous research in the area of CBIR systems typically for medical images, which provides a successive algorithm development for achieving generalized methodologies, which could be widely used. The achievement of such system mainly depends upon the strength, accuracy and speed of the retrieval systems. Content based image retrieval (CBIR) system is valuable in medical systems as it provides retrieval of the images from the large dataset based on similarities. The aim of this paper is to discuss the various techniques, the assumptions and its scope suggested by various researchers and setup a further roadmap of the research in the field of CBIR system for medical image.***
Keywords: Content–based image retrieval (CBIR), Digital Images, Medical Imaging.

I. INTRODUCTION

The rapid growth in the field of software and hardware for medical imaging (technique and process to create images of human body for clinical procedure), has made the medical science very high-tech. The continuous collaborative approaches of handling medical procedures have led to exponentially develop the large database of medical images.

The ultimate goal of medical imaging would succeed only if an intelligent, fast, and accurate medical image retrieval system could emerges out which should be adoptive in accordance to rapidly growing data size and semantically distinguishable as the features of various medical images are fuzzy in nature for different organs.

The medical images are distinguished in its characteristics as compared to the general purpose images (GPI). Thus the process adopted for searching GPI is not adoptable as it is in the case of medical image retrieval systems.Recently, advances in Content Based Image Retrieval prompted researchers towards new approaches in information retrieval for image databases. In medical applications it already met some degree of success in constrained problems. The generic framework is shown in Figure 1.

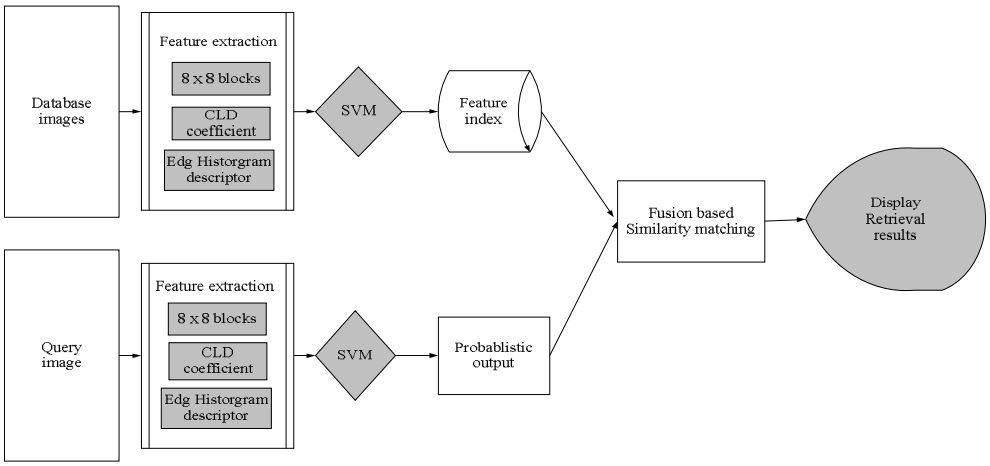


Fig-1: General Block Diagram of Image Retrieval

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II. LITERATURE REVIEW

This section discusses about the existing work being carried out towards CBIR mechanism. Bharat.[1] have presented a method for content based image retrieval based on support vector machine classifier. The feature extraction was done based on the colour string coding and string comparison. The image database used in our experiment contains 1800 colour images from Corel photo galleries. Hemant D. [2], presents a new use of CBIR approach in an important application that can assist law enforcement in solving many complicated crimes. It is matching forensic sketch with digital human face or face sketch recognition system. Liu, [3] Presented a survey of content-based image retrieval with high-level semantics in Pattern recognition.

Smeulders,[4] presents a use of Content-based image retrieval at the end of the early years. Philippe, [5]have presented a method of Content-based representation and retrieval of visual media and representation and retrieval of visual media in multimedia systems. Kokare, [6 presents a survey on current content based image retrieval methods. David E. [7], have presented a method of Genetic algorithms and machine learning. Shandilya. [8] presents a use of different methods in content based image retrieval systems. Juneja, [9] presented a survey on recent image indexing and retrieval techniques for low-level feature extraction in CBIR systems. CeyhunBurak, [10]]have presented a method for Content-based image retrieval in radiology.

III. CONCLUSION

The proposed study extract the research . An interface will be designed in Matlab considering ImageCLEF database with multiple modalities, body parts, and orientation. The study has focused on designing a framework of clustering to medical image retrieval system. A large collection of images is partitioned into a number of image clusters. Given a query image, the system retrieves all images from the cluster that is closest in content to the query medical image. The proposed system is based on partitional clustering that aims at partitioning a group of data points into disjoint clusters optimizing a specific factor. Instead, heuristic techniques can be applied to find the optimal partitioning. The most popular criterion function used for partitional clustering is the sum of squared error function and a mathematical equation for performing clustering. The proposed framework for performing contribution based medical image retrieval system is evaluated on large set of medical images belonging to different categories of medical conditions pertaining to human body (e.g. spine, palm, MRI, skull, ankle etc). The next phase of the study focused in implementing a framework to perform biomedical image retrieval system that is performed using feature extraction using visual descriptors and filtering of datasets. In order to maintain better preciseness in retrieval result, the training of the dataset will be performed using unsupervised learning algorithm on the extracted features. The system mainly will be designed in two phase e.g. dataset creation and retrieval system. The final preciseness of the retrieved results will be done using relevance feedback. As the system will be design over content based retrieval system model, the final feasibility of surfacing false positives images in retrieval system will be addresses using relevance feedback.

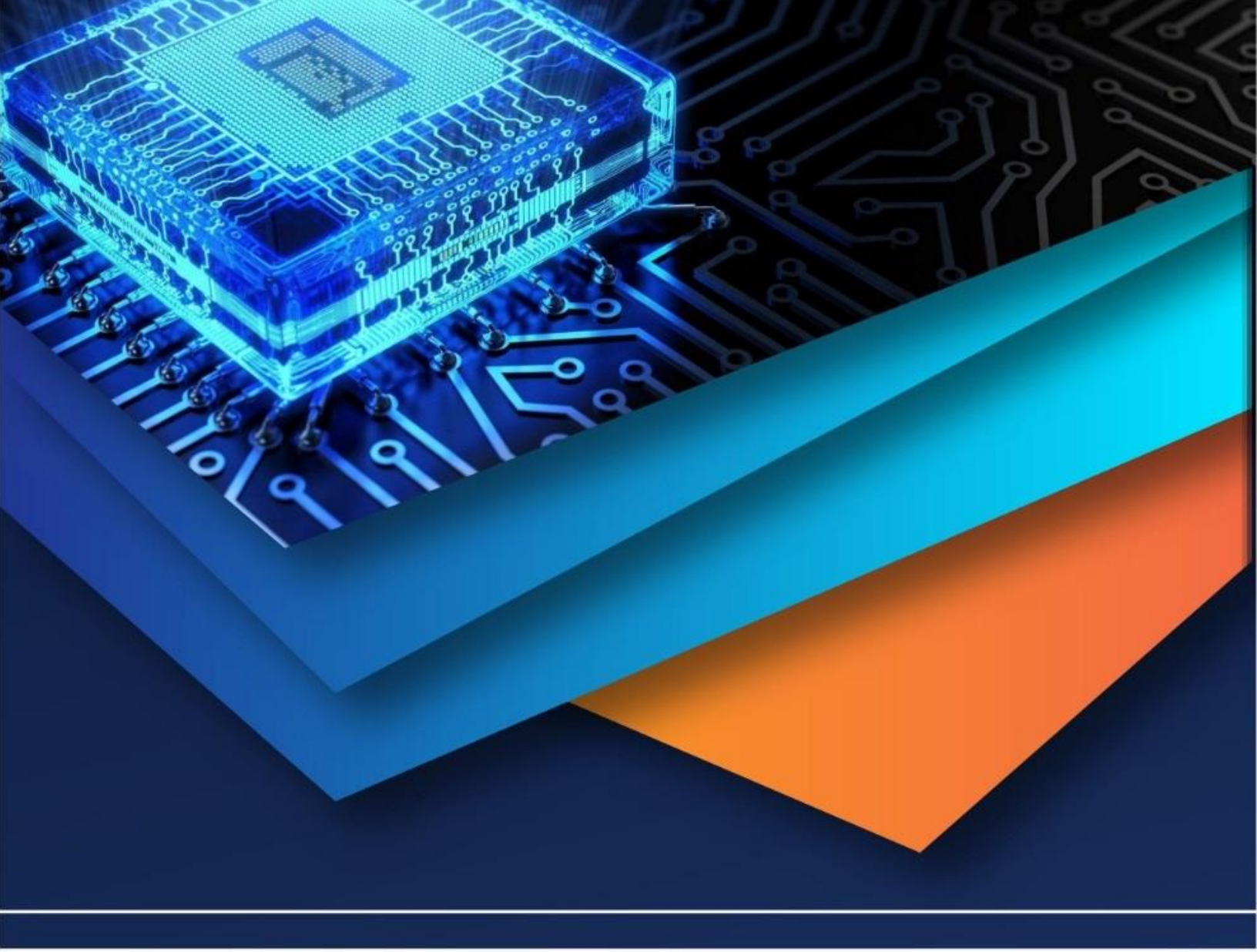
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