

INTERACTIVE IMAGE RETRIEVAL WITH ADVANCED CLUSTERING STRATEGY

ANUJA KHODASAKR & SIDDHARTH LADHAKA

SIPNA COET, Amravati University, Maharashtra, India

ABSTRACT

This paper presents an image retrieval engine based on advanced clustering strategy which improves performance of image retrieval in term of precision, recall, accuracy and retrieval time. This paper also highlights an overview of recently developed image clustering techniques and their real time applications such as Clustering based image binarization in palm leaf manuscripts, Blood Vessel Extraction for retinal images, synthetic aperture radar images, tumor detection in MRI images etc. Clustering is usually used in image processing, data mining, image retrieval, pattern recognition, image segmentation etc. Clustering provides an effective analysis and proper validation of image for retrieval. The proposed system is employed advanced clustering strategy which utilized N-cut clustering, hierarchical and fuzzy k-means clustering techniques. Cluster based image retrieval system search similar images based on clusters that calculated by color, texture and shape and compare similarity with query image clustered feature. Clustered based image retrieval is fast and accurate. Here, K mean clustering form clusters of similar image features and then N-cut arrange these clusters to improve retrieval speed. Hierarchical clustering is applied on retrieved set of images in relevance feedback to improve accuracy. Proposed content based image retrieval system based on novel clustering strategy significantly improves performance of image retrieval. Experimental result reveals that there is outstanding improvement in accuracy, retrieval time, precision and recall of the image retrieval system.

KEYWORDS: Clustering Strategy, Hierarchical Clustering, Image Retrieval Engine, K-Mean Clustering, N-Cut Clustering, Precision