Abstract

Content based image retrieval is an application of computer vision technique used to solve the problem of searching images in large databases. The paper introduces three different techniques tested with two different datasets in order to compare the retrieval efficiency and accuracy. The feature vector is formed using Color and texture information extracted. The color information extraction process includes separation of image into Red, Green and Blue planes. Then each plane is divided into 4 blocks and for each block row mean vectors are calculated. This system uses Cosine transform to generate the feature vectors of the query and database images. Cosine transform is applied over a row mean vector of each block separately, which gives a set of feature vector of size 15 elements in the first technique. In the second technique first 60 coefficients are considered for feature vector formation. In the third technique after extraction of Red, Green and Blue components, they are divided into four parts. From each part separate row mean is calculated and discrete cosine transform is applied on it and from each component taking 5 values each block. For each color component. The total feature vector of size 60 is created. Euclidean, Minkowski and Absolute difference are used as similarity measures to compare the image features for image retrieval in proposed CBIR
techniques. Two standard datasets namely COIL and Wang are used for the experimentation purpose. COIL dataset consist of 500 processed images in 10 different categories and Wang's dataset consist of 1000 unprocessed images in 10 different categories. Average Precision and Recall values are considered for checking performance of all three techniques.

References

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Index Terms

Computer Science Image Processing

Keywords

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