Abstract

This paper mainly discusses the use of discrete cosine transform and its wavelet for feature extraction in the application of content based image retrieval. The proposed method has been experimented based on the concept of sectorization of the transformed images using DCT and DCT Wavelet. For the detailed study of the behavior of the method the sector sizes are varied in 4, 8, 12 and 16 sector sizes. For each sector sizes two separate similarity measures namely
Euclidean distance (ED) and the sum of absolute difference (AD) are considered. So the performance of the proposed methods are compared and analyzed based on the sector sizes and type of similarity measures used. The various parameters like precision, recall and its cross over point plots, LIRS and LSRR are used to measure the overall as well as the class wise performances. The sizes of the image database consist of 1055 images distributed among 12 different classes. Comparing the performance of DCT and DCT Wavelet on the broader term it has been observed that 4 sectors and 8 sectors of DCT (column wise) and DCT Wavelet (column wise) with sum of Absolute difference as similarity measure provide the best outcome of the retrieval i.e. close to 45%.

Reference

Performance Comparison of Sectorization of DCT and DCT Wavelet Transformed Images in CBIR

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Index Terms

Computer Science

Pattern Recognition

Key words

CBIR

Precision

Recall

LSRR

LIRS

Euclidean distance

sum of absolute difference