

Content-Based Image Retrieval Using HSV Color Space Features

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Abstract : In this paper, a method is provided for content-based image retrieval. Content-based image retrieval system searches query an image based on its visual content in an image database to retrieve similar images. In this paper, with the aim of simulating the human visual system sensitivity to image's edges and color features, the concept of color difference histogram (CDH) is used. CDH includes the perceptually color difference between two neighboring pixels with regard to colors and edge orientations. Since the HSV color space is close to the human visual system, the CDH is calculated in this color space. In addition, to improve the color features, the color histogram in HSV color space is also used as a feature. Among the extracted features, efficient features are selected using entropy and correlation criteria. The final features extract the content of images most efficiently. The proposed method has been evaluated on three standard databases Corel 5k, Corel 10k and UKBench. Experimental results show that the accuracy of the proposed image retrieval method is significantly improved compared to the recently developed methods.

Keywords : content-based image retrieval, color difference histogram, efficient features selection, entropy, correlation

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