

A NOVEL CONTENT BASED IMAGE RETRIEVAL METHOD BASED ON SPLITTING THE IMAGE INTO HOMOGENEOUS REGIONS

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ABSTRACT. *Color histograms are widely used for content-based image retrieval. Their advantages are efficiency and insensitivity to small changes in camera viewpoint. However, this technique does not employ spatial information of image colors. To take spatial information into account, some local color feature-based approaches proposed. However, these approaches have some disadvantages such as low effectiveness, consuming computation times and storage. This paper proposes a novel technique for retrieving images called HR (Homogeneous Region), which is based on splitting images into two homogeneous regions.*

We carry out an experiment on an image database containing 10,000 images. Experimental results show that our technique is more effective than the color coherence vector (CCV) and Color Based Clustering based retrieval techniques.

Keywords: Content based image retrieval, Homogeneous region and color histogram

1. **Introduction.** In recent years, content-based image retrieval (CBIR) is central research field required for quickly searching on large image database. Traditional retrieval of images by manually assigned keyword is definitely not CBIR, as the term is generally understood even if the keywords describe image content. However, there are two disadvantages in this approach. The first is that if an image collection in database is very huge, the time that a person has to spend by assigning keywords to each image is excessive. The second is more serious which disadvantage is a subjectivity of human perception [1-3]. Sets of keywords of image content that are described by different people cannot be similar. In order to overcome the mentioned shortcoming of the text based retrieval systems, content based image retrieval systems use the keywords substituted by own visual content such as color, texture and shape [1,3,4]. These systems are based on different techniques describing visual content of images from an image database [2,3,24-26]. During the retrieving images based on content, the system matches visual content of an image with content of each image in the database and select a subset of the image database whose visual contents are most similar with this image [1-3].

Current content based image retrieval techniques are divided into three categories: color, texture and shape. Shape information of images is used for special image retrieval systems. Color and texture based retrieval techniques are used for universal and quite automatic systems.

Although the global color feature is simple to calculate and can provide reasonable discriminating power in image retrieval, it tends to give too many false positives when the