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FCTH: FUZZY COLOR AND TEXTURE HISTOGRAM

A LOW LEVEL FEATURE FOR ACCURATE IMAGE RETRIEVAL

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Abstract

This paper deals with the extraction of a new low level feature that combines, in one histogram, color and texture information. This feature is named FCTH - Fuzzy Color and Texture Histogram - and results from the combination of 3 fuzzy systems. FCTH size is limited to 72 bytes per image, rendering this descriptor suitable for use in large image databases. The proposed feature is appropriate for accurately retrieving images even in distortion cases such as deformations, noise and smoothing. It is tested on a large number of images selected from proprietary image databases or randomly retrieved from popular search engines. To evaluate the performance of the proposed feature, the averaged normalized modified retrieval rank was used. An online demo that implements the proposed feature in an image retrieval system is available at: http://orpheus.ee.duth.gr/image_retrieval.