

IMAGE RETRIEVAL USING NON-INVOLUTIONAL ORTHOGONAL KEKRE'S TRANSFORM

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Abstract

The paper presents Kekre's Transform, the novel non-involutional orthogonal transform. Also novel content based image retrieval techniques using Kekre's Transform are presented. Here the database image features are extracted by applying Kekre's Transform on gray plane (average of red, green and blue) and color planes (red, green and blue components). The techniques Kekre-Gray and Kekre-RGB are tested on two different image databases with 11 and 15 categories respectively with 1000 and 1080 images. Total 55 queries are fired on first image database and 75 queries on second database. The results show that precision and recall of Kekre-RGB are higher than Kekre-Gray technique of image retrieval. Also the computational complexity of applying Kekre's transform on image is much lesser than that of Walsh or DCT, resulting in faster retrieval.

Keywords: Kekre's Transform, CBIR, Kekre-Gray, Kekre-RGB.