Combined feature descriptor for content based image retrieval

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Abstract

Content based Image Retrieval (CBIR) allows automatically extracting target images according to objective visual contents of the image itself. Representation of visual features and similarity match are important issues in CBIR. Colour and texture features are important properties in CBIR systems. In this paper, a combined feature descriptor for CBIR is proposed to enhance the retrieval performance for CBIR. This method is developed by exploiting the wavelets and colour histogram moments. First, Haar wavelet is used to decompose colour images into wavelet coefficients. Then image feature extraction and similarity matching are performed by means of histogram moments. Ten categories of colour images are used to test the proposed technique. Experiment results show significant improvement of retrieval efficiency as compared to that of histogram moments as well as 2D Discrete Wavelet Transform.

Author keywords

2D Discrete Wavelet Transform; colour histogram moments; Content based Image Retrieval; Haar wavelet

Indexed keywords

2-d discrete wavelet transforms; CBIR system; Colour image; Combined features; Content based image retrieval; Haar wavelets; Image feature extractions; Retrieval efficiency; Retrieval performance; Similarity-matching; Target images; Texture features; Visual content; Visual feature; Wavelet coefficients

Engineering controlled terms: Color; Content based retrieval; Discrete wavelet transforms; Feature extraction; Graphic methods; Image processing; Information systems

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