

Image retrieval by composition of regions

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Abstract

We present an image retrieval system called "STRICT". Its design is based on a formulation of fuzzy similarity measures that is derived from psychological considerations and that leads to an intuitive formulation of the similarity. We use these measure to evaluate a region to region visual similarity score. Then, we aggregate these scores in different ways depending on the purpose of the request. By aggregating basic scores such as region to region similarity values we form various kinds of composite regional queries. These queries can cover several different user needs such as scene retrieval, multiple aspects retrieval and object filtering.

Key words: Image Retrieval, Segmentation, Fuzzy Similarity Measures, Aggregation

1. Introduction

In the last decade, there has been an increasing interest in image retrieval systems. The idea is to let a user query an image database for a specific image content. Unfortunately, this common goal has not been achieved yet [5].

To find images in large multimedia databases, the challenge is to avoid the use of textual annotations. In fact, they can only be obtained by a time and human consuming process. That is why the image retrieval community has focused on the automatic extraction and comparison of image features. These features gather different visual information contained in an image such as colour, texture and shape. It is then possible to measure the similarity of two images or parts of images in this feature space.

To run a query in a database of images described by visual features, the community