Abstract

Content based image retrieval (CBIR) systems retrieve images based on their primitive features such as color, texture, shape etc. The semantic gap is defined as the inconsistency between the image retrieval based on these low level image features and high level human semantics. In this paper, the comparative analysis of various color model transformations is presented with the help of our proposed methods based on three color descriptors i.e. color histogram, color moments and color coherence vectors to determine the applicability of these models and descriptors for the reduction of semantic gap. Support vector machines are used to classify images into different semantic classes. The results are inferred with the help of performance parameters like precision, recall, and mean average precision. Experimental results suggest that the proposed approach gives a good evaluation of the applicability of color models as well as color descriptors for optimization of semantic gap in CBIR.

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Index Terms

Computer Science   Image Processing

Keywords

Color models   Content based image retrieval (CBIR)   Mean Average Precision
Semantic gap
Support vector machines.