

Image Retrieval Based on Multi-Feature Fusion for Heterogeneous Image Databases

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Abstract : Selecting an appropriate image representation is the most important factor in implementing an effective Content-Based Image Retrieval (CBIR) system. This paper presents a multi-feature fusion approach for efficient CBIR, based on the distance distribution of features and relative feature weights at the time of query processing. It is a simple yet effective approach, which is free from the effect of features' dimensions, ranges, internal feature normalization and the distance measure. This approach can easily be adopted in any feature combination to improve retrieval quality. The proposed approach is empirically evaluated using two benchmark datasets for image classification (a subset of the Corel dataset and Oliva and Torralba) and compared with existing approaches. The performance of the proposed approach is confirmed with the significantly improved performance in comparison with the independently evaluated baseline of the previously proposed feature fusion approaches.

Keywords : feature fusion, image retrieval, membership function, normalization

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