Fast and Efficient K-means based Algorithm to Content-based Image Clustering

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Abstract

Some of the present approaches compare the user’s query image against all of the database images; as a result, the computational complexity and search space will boost, respectively. The fundamental purpose of the research presented in the present paper is to evolve a general purpose clustering method that can efficiently and effectively handle large capacity image databases. It can be fluently embedded into distinct CBIR systems. In this paper, we developed a novel content-based image clustering technique based on an effective k-means based algorithm. The co-occurrence matrix features and color moments are utilized to evolve an effective and innovative image clustering framework. The texture and color features are integrated to enhancing results obtained using individual descriptors. The introduced k-means based clustering algorithm has been proposed as a preprocessing procedure to accelerate image retrieval and to enhance image retrieval accuracy. The experimental outcomes based on COREL images have been investigated and indicated considerable refinement in terms of quality of image clustering, retrieval accuracy, and speed compared against the conventional k-means method.
References

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Index Terms

Computer Science  Image Processing

Keywords

Content-based image clustering, Feature extraction, K-means clustering