Abstract

Medical image retrieval to search for clinically relevant and visually similar images depicting suspicious lesions have been attracting research interest. Content-based image retrieval (CBIR) is an important alternate and complement to traditional text-based retrieval using keywords. We have implemented CBIR system based on effective use of texture information within the images obtained by statistical cooccurrence matrix method. Also, the method is improved by bridging the semantic gap between low-level visual features and the high-level semantic concepts using automated image annotations. In this paper, we have proposed a classification-based multi-class multi-label semantic model and the corresponding learning procedure to address the problem of automatic image annotation using J48 decision tree classifier and show its application to medical image retrieval. Hash structure is used to index images. Euclidean distance measure is used for similarity measurement. Both the methods are compared using precision and recall measures. Semantic indexing is shown to outperform CBIR for MR-T2 axial brain images.
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Index Terms

Computer Science
Medical Applications

Keywords
Cooccurrence matrix Decision tree classifier Semantic indexing.