Two Tier Approach for Automatic Retrieval of MRI Brain Image by Feature Extraction

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Abstract

Content Based Image Retrieval (CBIR) is also known as Query By Image Content (QBIC) is the one of the application of computer vision techniques, which retrieves the images from the image database instead of text. The CBIR is gaining the popularity in medical domain, because CBIR techniques help to search the digital images in the large database. The proper feature extraction and matching process, retrieves stored image from database by supplying the query image. The features such as color, shape texture or combination of them. In this paper, focused on texture and shape feature for extracting the image from database, by introducing the SVM (support vector machine) classifier followed by KNN (K-nearest neighbor).

In this paper propose a efficient retrieval of image using a supervised classifier which focused on the texture features. Segmentation based Fractal Texture Analysis or SFTA algorithm is used to extract the texture feature from images. To select best features from extracted features to train the classifier, achieve better feature optimization. The classification is done on the database and it is classified in to three categories such as normal, benign and malignant. The
query image is classified using a classifier and retrieve the relevant image from the database from a particular class.

References

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Index Terms

Computer Science  Image Processing

Keywords

Content Based Image Retrieval, Feature extraction, MRI brain tumor image, SVM