Abstract

Automatic segmentation of parotid glands for computer-aided diagnosis in clinical practice is still a challenging task, especially when there are lesions needing to be outlined. In the applications of image-based diagnosis and computer-aided lesion detection, image segmentation is an important procedure. Features extracted from image analysis in companion with image segmentation algorithms are used to provide region-based information for clinical evaluation procedures. In this paper, we describe a method for segmenting the parotid regions with skeptical lesions in the head and neck CT images. At first, à trous, a modified discrete wavelet transform algorithm, is introduced to decompose an image into sub-bands, and the feature descriptors effective for soft tissues characteristics are computed using the derived coefficients in the sub-bands. Then, clustering algorithms are proposed to connect the pixels corresponding to similar features into several regions of the soft tissues, and so do the tissues of the lesions. In this paper, a comparative study of feature-based segmentation with three methods is carried on, and the extracted regions are compared with the segmentation from the experts for evaluating the performance.
Segmentation of Parotid Lesions in CT Images using Wavelet-based Features

References

Segmentation of Brain Tumor using Texture Analysis. International Conference on Recent advances in artificial Intelligence, Knowledge Engineering and Databases.

Index Terms

Computer Science
Pattern Recognition
Keywords
Parotid  Wavelet  Computer Tomography  Image Segmentation