Computer Aided Lung Cancer Detection and Tumor Staging in CT image using Image Processing

Volume 128

Number 7

Year of Publication: 2015

Authors:

Sruthi Ignatious, Robin Joseph, Jisha John, Anil Prahladan

10.5120/ijca2015906607

Abstract

Lung cancer is one of the death threatening diseases among human beings. Early and accurate detection of lung cancer can increase the survival rate from lung cancer. Computed Tomography (CT) images are commonly used for detecting the lung cancer. Nowadays the lung cancer is staged according to the TNM staging method where T means Tumor, N means Nodule and M means Metastases. The existing lung cancer detection algorithms cannot stage cancer according to the TNM staging method. The proposed system can identify the T stage of the cancer accurately. The proposed system includes different stages such as pre-processing, segmentation, feature extraction, tumor detection and tumor stage identification. The proposed system promises better result than the existing systems, which would be beneficial for the radiologist for the accurate and early detection of cancer. The method has been tested on 200 slices of CT images of various stages of cancer obtained from Regional Cancer Centre Trivandrum and is found to give good results. The accuracy of the proposed method in this dataset is 94.4%
References

15. R. Kohavi, “Scaling up the accuracy of Naïve-Bayes Classifiers: a Decision-Tree Hybrid”, Proceedings of the second International Conference on knowledge Discovery and Data Mining,1996

Index Terms
Computer Science       Image Processing
Keywords

CT image, Pre-processing, Segmentation, Feature Extraction, TNM stage