## FEATURES EXTRACTION OF LUNG NODULES USING CHEST RADIOGRAPHS FOR CLASSIFICATION

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## Abstract

The lung cancer is one of the most common causes of death from malignancy in the world. The survival rate is between 10% and 15%, and over the last 20 years it has remained the same, since the disease usually manifest itself at an advanced stage. If malignant pulmonary nodules were detected at an operable stage, the survival rate would dramatically improve. The early detection and diagnosis of pulmonary nodules in chest radiographs are among the most challenging clinical task performed by radiologist. It is known that skilled pulmonary radiologist have a high degree of accuracy in diagnostic, but there remains problems in disease detection like, detection of small nodules, availability of false positives, like rib crossings, vessel-vessel crossings and end-on vessels. Various CAD schemes, which utilize both image processing techniques and Artificial Neural Network (ANN), have been proposed to assist radiologist in detecting lung nodules. Image processing involves noise suppression, restoration and enhancement of the data. Edge extraction is carried out at this stage. Image segmentation is the next step, in which computer tries to separate objects from the image background, and from each other, as well as from the other objects like small vessels, end-on vessels, ribs etc. Various features like shape (circularity or roundness), area, diameter, perimeter, are to be extracted from data after segmentation. This paper describes the image processing techniques used for segmentation and extraction of above said features from chest radiographs.

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Keywords: Chest Radiographs, Image Processing, Segmentation, and Feature Extraction.