Abstract

Medical diagnosis is extremely important but complicated task that should be performed accurately and efficiently. Disease diagnosis is one of the applications where data mining tools are proving successful results. Chronic obstructive pulmonary disease (also known as COPD) is a condition that makes breathing difficult. Chronic Obstructive Pulmonary Disease (COPD) is the fourth leading cause of death worldwide and the only chronic disease with increasing mortality rates. COPD is the name for a group of lung diseases including chronic bronchitis, emphysema and chronic obstructive airways disease. The primary cause of COPD is smoking. Progression of the disease is irreversible but can be stabilized or prevented by quitting. If COPD is detected earlier, the formation of lung cancer is prevented. In CT scan may provide additional information and also it provides more detailed images of parts of the body that cannot easily be seen on a standard chest radiograph. First the input image is pre-processed then the lung region is segmented from that image, segmented the cavity region in that lung region, extracted some features for training the classifier and used the Extreme Learning Machine (ELM) classifier to identify the COPD affected lung. The pre-processing is done by using the median Filtering to avoid the noise in the input image and to increase the image quality. After the lung and cavity segmentation, some parameters are chosen to train the classifier to identify whether an x-ray image is a normal or affected. The ELM Classifier is then trained using the
parameters chosen from the sample chest CT scan images to identify the normal lung and tuberculosis affected lung.

References

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Classification of Lung Regions using Morphometrics for Chest CT Scans


Index Terms

Computer Science
Image Processing

Keywords

Chronic Obstructive Pulmonary Disease (COPD)  ELM classifier  Median Filtering  Medical Imaging

Local Gabor XOR pattern (LGXP).