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Patent Search

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Abstract:

The invention pertains to a Computer Aided Diagnosis System for Lung Diseases Detection using CT Images, designed to automate and enhance the diagnosis of vari pulmonary conditions. Comprising several key modules, the system starts with an image preprocessing module that enhances and segments lung tissues from CT im employing techniques such as noise reduction and contrast enhancement. A feature extraction module then identifies and extracts essential morphological propertie lung pathology. The system further includes a classification and detection module that categorizes the extracted features into specific lung diseases, enabling precise and localization. Integration with Electronic Medical Records (EMR) and a user-friendly graphical interface for medical professionals add to the system's functionality. invention emphasizes adaptability, scalability, and continuous learning, providing a comprehensive solution for early detection, standardized diagnosis, and efficient i of lung diseases across various healthcare environments. Accompanied Drawing [FIGS. 1-2]

Complete Specification

Description:[001] The present invention relates to the field of medical imaging and diagnostics, specifically focusing on the early and precise detection of lung disea using CT (Computed Tomography) images. It involves the integration of computer algorithms, artificial intelligence (AI), and image processing techniques to analyze, interpret, and identify potential abnormalities or patterns indicative of various lung diseases such as lung cancer, pneumonia, tuberculosis, and other pulmonary conditions.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the informati provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue c inclusion in this section.

[004] Lung diseases, including conditions like lung cancer, pneumonia, tuberculosis, and other respiratory abnormalities, remain one of the most significant health challenges globally. Early detection and precise diagnosis of these conditions are crucial to increase survival rates and improve patient outcomes. Traditionally, the e of lung diseases has relied on CT (Computed Tomography) images, which are manually examined by radiologists. While this method has been essential in the medic it has faced several limitations.

[005] The manual interpretation of CT images requires significant expertise and can be both time-consuming and subjective. The efficiency of diagnosis heavily dep

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