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Pulmonary disease identification using machine learning and deep learning techniques.

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ABSTRACT

The early detection and diagnosis of lung diseases can greatly improve the prognosis of affected individuals. However, the traditional methods of diagnosis rely heavily on subjective assessments of symptoms and medical imaging. This often leads to a delay in diagnosis and treatment. In light of this challenge, a system that can effectively predict lung diseases by combining patient symptoms and X-ray images can greatly enhance the accuracy and speed of diagnosis. This study presents a novel lung disease prediction system that utilizes both patient symptoms and X-ray images to provide a more comprehensive and reliable diagnosis.

The solution proposed in this project is the development of a mobile application for detecting lung diseases. The application will utilize both patient symptoms and X-ray images to make a diagnosis. By combining these two sources of information, the application will provide a more comprehensive and accurate assessment of the patient's condition, reducing the chances of misdiagnosis. The goal is to create a tool that is accessible and convenient for individuals, especially considering the current circumstances where many patients are unable to visit the hospital. This application has the potential to help address the growing problem of lung diseases among young people, particularly those with smoking addictions, by providing them with a quick and easy way to assess their health.

KEY WORDS

Machine Learning, Deep learning, Random Forest Classifier, Convolutional Neural Network

SUBJECT DESCRIPTORS

Information systems → Medical information systems → Diagnosis prediction systems

Information systems → Medical imaging → X-ray image analysis

Applied computing → Medical technology → Disease detection and diagnosis.

Computing methodologies → Machine learning → Medical image analysis algorithms

Computing methodologies → Machine learning → Disease prediction models