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Lung Cancer Detection Using AI & Python

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Abstract: *Lung cancer is a major cause of cancer-related deaths globally, necessitating improved early detection strategies. Conventional diagnostic methods, such as manual CT scan analysis, often face issues like accuracy, time efficiency, and subjective interpretation. This research explores the use of Convolutional Neural Networks (CNNs) for automated lung cancer detection using medical imaging data, focusing on CT scans. The proposed framework uses CNNs' feature extraction capabilities to differentiate between malignant and benign tissues with high accuracy. The system's design includes data preprocessing, model training, and performance evaluation. Initial findings show promising accuracy rates, indicating the system's potential for early lung cancer diagnosis. However, challenges like class imbalance, limited data availability, and model generalization across patient populations need to be addressed. The study recommends further investigation into advanced architectures and augmentation strategies to improve model resilience. By integrating deep learning methodologies into clinical practices..*

Keywords: Lung Cancer Detection, Lung Cancer, Lung Cancer Detection using AI, Lung Cancer Detection using AI & Python, Artificial Intelligence in Cancer Diagnosis

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