

Alzheimer's Disease and Lung Cancer Detection using Deep Learning

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Abstract: Alzheimer's disease and lung cancer are two of the most difficult and serious health problems in the world. Early detection of these diseases can improve patient outcomes, but traditional methods are inaccurate and time-consuming. Convolutional neural network (CNN) is a deep learning model that can learn features and patterns from medical images to identify and classify Alzheimer's disease and lung cancer with high accuracy. However, the use of deep CNN for medical image analysis requires expertise and computing equipment. Deep CNNs such as U-Net can increase the accuracy of medical image analysis but increase computational and training costs. Despite the challenges, the application of CNNs for medical image analysis has shown great potential in improving the detection of Alzheimer's disease and lung cancer. With further development, these models can help physicians provide early detection and individualized treatment for patients with these diseases. The Python language was used to implement a system that is very useful for doctors, classifying Alzheimer's disease and lung cancer. The models used a large data set from a pool of patients and healthy individuals. The model used 70% of the image for training and 30% of the image for validation. The accuracy obtained by CNN is 94%, which is more effective compared to the accuracy obtained by traditional neural network.

Keywords: Alzheimer's disease and lung cancer; deep learning; classification; convolutional neural network (CNN); magnetic resonance imaging (MRI).

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