Lung CT Parenchyma Segmentation using VGG-16 based SegNet Model

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Abstract

Lung parenchyma segmentation is a very important stage in every CAD system for lung cancer detection. In this paper, we propose a new method for CT lung Parenchyma segmentation using the deep SegNet neural network with VGG-16 model. Firstly, 120 CT lung images were collected for the training phase and their ground truth maps were obtained using manual segmentation. Secondly, the training images alongside their corresponding ground truth label images were used as input to the VGG-16 based SegNet model. Finally, 60 CT lung images were collected to validate the performance of the model. The experimental results showed that an accurate segmentation with an average dice similarity index equal to 0.9586 is achieved.

References


Index Terms

Computer Science Artificial Intelligence

Keywords
Lung CT, Parenchyma, Semantic Segmentation, Deep learning, SegNet, Vgg16.