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Classification of lung X-rays with pneumonia disease using deep learning models

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Pneumonia is a life-threatening lung disease caused by either a bacterial or viral infection. It can be lifethreatening if not acted on at the right time, and so early diagnosis of pneumonia is vital. The aim of this work is the automatic detection of bacterial and viral pneumonia on the basis of X-ray images. Four different pre-trained deep convolutional neural networks (CNN): VGG16, ResNet50, DenseNet201, and MobileNet_v2 were used to classify X-rays images. 3,948 chest X-rays consisting of bacterial, viral, and normal chest X-rays were used, and using preprocessing techniques, the modified images were trained in the classification task. Thus, the proposed study may be useful for faster diagnosis of pneumonia by a radiologist and may help in the rapid screening of patients with pneumonia.

Summary

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