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The Employment of Transfer Learning for Covid-19 Diagnostics: A Resnet Evaluation

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Abstract

Artificial intelligence (AI) have made significant gains and contribution, particularly owing to the introduction of powerful graphical processing units in recent times. Furthermore, the advent of transfer learning models, which is a subset of deep learning models such as VGG16, InceptionV3, and ResNet, to name a few, have further allowed for the accomplishment of a variety of tasks. In modern medicine, AI has been used for the detection of diseases. The recent virus outbreak has gravitated the capabilities of AI to be deployed in a short time as the virus evolves. This study demonstrated that medical data is sensitive, and the learning model should be tuned for each dataset. The findings from the present study suggest that the ResNet101V2-sigmoid pipeline shows the most promising results in detecting COVID-19 from chest x-ray images. This will pave the way for the development of high-performance detection models, albeit with limited datasets.

Keywords: Activation function; Covid-19; ResNet; Transfer learning; X-Ray.