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Multi-layer Hybrid Classification Model of COVID-19 Chest X-ray Images

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We use this protocol and it's working

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Abstract

The coronavirus disease of 2019(COVID-19) has been declared a pandemic and has raised worldwide concern. Lung inflammation and respiratory failure are commonly observed in moderate-to-severe cases. Radiography or chest X-ray imaging is compulsory for diagnosis, and interpretation is commonly performed by skilled medical specialists. In this study, we propose anew computer-aided diagnosis (CADx) tool for identifying chest X-ray images of COVID-19 infection using a multi-layer hybrid classification model (MLHC). The MLHC-COVID-19 consists of two layers, Layer I: Healthy and non-Healthy; Layer II: COVID-19 and non-COVID-19. The MLHC-COVID-19 was evaluated in real COVID-19 cases. The classification results showed promising performance comparable with other existing techniques considering the accuracy, sensitivity, and specificity of 96.20%, 96.20%, and 0.971%, respectively. This demonstrates the effectiveness of the MLHC-COVID-19 in classifying chest X-ray images, enhancing the accuracy of chest X-ray image interpretation with a reduction in the interpretation time. Furthermore, a detailed comparison of the MLHC-COVID-19 with other techniques has been presented.



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