



A novel classifier architecture based on deep neural network for COVID-19 detection using laboratory findings



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ABSTRACT

Unfortunately, Coronavirus disease 2019 (COVID-19) is spreading rapidly all over the world. Along with causing many deaths, it has substantially affected the social life, economics, and infrastructure worldwide in a negative manner. Therefore, it is very important to be able to diagnose the COVID-19 quickly and correctly. In this study, a new feature group based on laboratory findings was obtained considering ethnical and genetic differences for interpretation of blood data. Then, using this feature group, a new hybrid classifier architecture based on deep learning was designed and COVID-19 detection was made. Classification performance indicators were obtained as accuracy of 94.95%, F1-score of 94.98%, precision of 94.98%, recall of 94.98% and AUC of 100%. Achieved results were compared with those of the deep learning classifiers suggested in literature. According to these results, proposed method shows superior performance and can provide more convenience and precision to experts for diagnosis of COVID-19 disease.

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