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(57) Abstract :

Monkeypox virus is emerging slowly with the decline of COVID-19 virus infections around the world. People are afraid of it, thinking that it would appear as a pandemic like COVID-19. As such, it is crucial to detect them earlier before widespread community transmission. AI-based detection could help identify them at the early stage. In this work, we aim to compare 13 different pre-trained deep learning (DL) models for the Monkeypox virus detection. For this, we initially fine-tune them with the addition of universal custom layers for all of them and analyse the results using four well-established measures: Precision, Recall, F1-score, and Accuracy. After the identification of the best-performing DL models, we ensemble them to improve the overall performance using a majority voting over the probabilistic outputs obtained from them. We perform our experiments on a publicly available dataset, which results in average Precision, Recall, F1-score, and Accuracy of 85.44%, 85.47%, 85.40%, and 87.13%, respectively with the help of our proposed ensemble approach. These encouraging results, which outperform the state-of-the-art methods, suggest that the proposed approach is applicable to health practitioners for mass screening.

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