Peer-Review Report

Peer Review of "COVID-19 Pneumonia Diagnosis Using Medical Images: Deep Learning-Based Transfer Learning Approach"

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Related Articles:
Preprint (arXiv): https://arxiv.org/abs/2503.12642v2
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Published Article: https://med.jmirx.org/2025/1/e75015

JMIRx Med 2025;6:e83234; doi: 10.2196/83234

Keywords: computer vision; COVID-19 pneumonia diagnosis; deep learning; transfer learning; medical imaging analysis

This is the peer-review report for "COVID-19 Pneumonia Diagnosis Using Medical Images: Deep Learning-Based Transfer Learning Approach."

Round 1 Review

General Comments

This manuscript [1] describes a transfer-learning approach using pretrained convolutional neural networks (VGG16, VGG19, ResNet-50) for binary COVID-19 detection on chest X-ray and computed tomography images. Overall, it tackles a timely problem and reports high accuracy (>97%), but several methodological and reporting issues limit confidence in the findings and their reproducibility.

Specific Comments

Major Comments

1. Lack of clinical validation: no in vivo or clinical ground-truth data are provided. The model's >97% accuracy is based solely on public datasets; it's unclear how it performs on real-world, heterogeneous clinical images.

2. Overfitting and hyperparameter tuning: identical performance across 5 hyperparameter settings for VGG16 suggests under- or overfitting. No learning curves or regularization impact analyses are shown to substantiate robustness claims.

3. Model comparison baseline: no comparison against simple baselines (eg, logistic regression on hand-crafted features) or recent literature benchmarks is provided, making it difficult to evaluate novelty and real gain.

Minor Comments

4. Repeated headings: "Integration into Mobile/Cloud-based Platform" appears twice in section 1; please consolidate.

5. Typographical and formatting errors: multiple sentences start without capitalization (eg, "we reviewing to the difference…") and several references lack publication details (eg, [27,28] list only URLs).

Conflicts of Interest

None declared.

References

1. Dharmik A. COVID-19 pneumonia diagnosis using medical images: deep learning-based transfer learning approach. JMIRx Med. 2025;6:e75015. [doi: 10.2196/75015]

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