Review of: "Application of Ensemble Learning in CXR Classification for Improving COVID-19 Diagnosis"

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Potential competing interests: No potential competing interests to declare.

This study addresses the classification of chest X-ray (CXR) samples, with a specific focus on identifying COVID-19 cases. The authors utilize Histogram of Oriented Gradients (HOG) for feature extraction and test various classifiers, including Support Vector Machine (SVM), Decision Tree (DT), Naive Bayes (NB), K-nearest neighbor (KNN), and Tree Bagger (TB). The study also incorporates an ensemble learning approach to enhance classification accuracy. Results show that all classifiers achieve over 90% accuracy, with the ensemble method being the most effective.

Strengths:

1. **Comprehensive Approach**: The study employs a range of classifiers, providing a thorough comparison of different machine learning techniques.
2. **Ensemble Learning**: The innovative use of ensemble learning significantly improves the diagnostic accuracy, highlighting the potential of this approach in medical imaging.

Weaknesses: **Novelty and Originality**: While the combination of HOG features and various classifiers is a well-established method, the study lacks clarity on what specific new contributions or improvements it offers beyond existing literature.

Suggestions for Improvement:

1. **Highlight Novel Contributions**: Clearly articulate the novel aspects of the study. For example, if the ensemble learning approach is unique, provide detailed insights into how it differs from existing methods.
2. What are the limitations for this model.
3. Cite these papers: Pandey, A., Kumar, A. An integrated approach for breast cancer classification.*Multimed Tools Appl***82**, 33357–33377 (2023). https://doi.org/10.1007/s11042-023-14782-7

A. Pandey and A. Kumar, "Deep Features Based Automated Multimodel System for Classification of Non-Small Cell Lung Cancer," *2022 IEEE Delhi Section Conference (DELCON)*, New Delhi, India, 2022, pp. 1-7, doi: 10.1109/DELCON54057.2022.9753643.

Recommendation: Minor Revisions Required.