Artificial intelligence-assisted analysis of CT abnormalities during COVID-19 recovery

Rebuttal Letter

Department of Radiology, Medical University of Innsbruck

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# Reviewer 1

## Point 1

### Issue

Add results in the abstract as well.

### Response

## Point 2

### Issue

The introduction is not sufficient.

### Response

## Point 3

### Issue

The literature review part needs to be added.

### Response

## Point 4

### Issue

After adding the literature review, add a summary table and clearly mention this study’s research gaps and contributions.

### Response

## Point 5

### Issue

More details, such as features, are required in the study data.

### Response

## Point 6

### Issue

The paper lacks details about hyper-parameters for machine learning models. For example, what was the C and class weight value for the SVM model?

### Response

## Point 7

### Issue

Have you considered the GridSearchCV for model hyper-parameters or set it manually?

### Response

## Point 8

### Issue

Comparison with state-of-the-art studies is missing.

### Response

## Point 9

### Issue

The Practical Implication of the study is missing.

### Response

## Point 10

### Issue

Conclusion also not well presented.

### Response

# Reviewer 2

## Point 11

### Issue

The introduction does not sufficiently contextualize how other published multi-parameter or machine learning approaches have succeeded or failed. What specific gaps remain? A more detailed table is needed to perform the literature review.

### Response

## Point 12

### Issue

What is new or improved about your multi-parameter modeling approach compared to existing frameworks?

### Response

## Point 13

### Issue

More details about selection and potential biases (e.g., dropouts, missing visits) are needed for the data set.

### Response

## Point 14

### Issue

It remains unclear how each scoring system aligns, differs, or complements the other.

### Response

Overemphasis on “satisfactory accuracy” without deeper clinical context.

## Point 15

### Issue

The neural network model performed poorly for DLCO.

### Response

## Point 16

### Issue

The SHAP analysis identifies “top 15” predictors. However, the manuscript does not address correlations among those predictors or discuss whether certain features might be redundant.

### Response

## Point 17

### Issue

With “opacity cutoff: 0.12%” or “high opacity cutoff: 0.002%” appear extremely small. The clinical significance of such minimal changes in lung volume being “abnormal” is unclear—are these thresholds truly meaningful in practice?

### Response

## Point 18

### Issue

The paper concedes “model overfitting” could be an issue. However, it lacks any systematic attempt (e.g., a learning-curve analysis or thorough regularization strategy) to demonstrate that overfitting is minimal or under control.

### Response

# References