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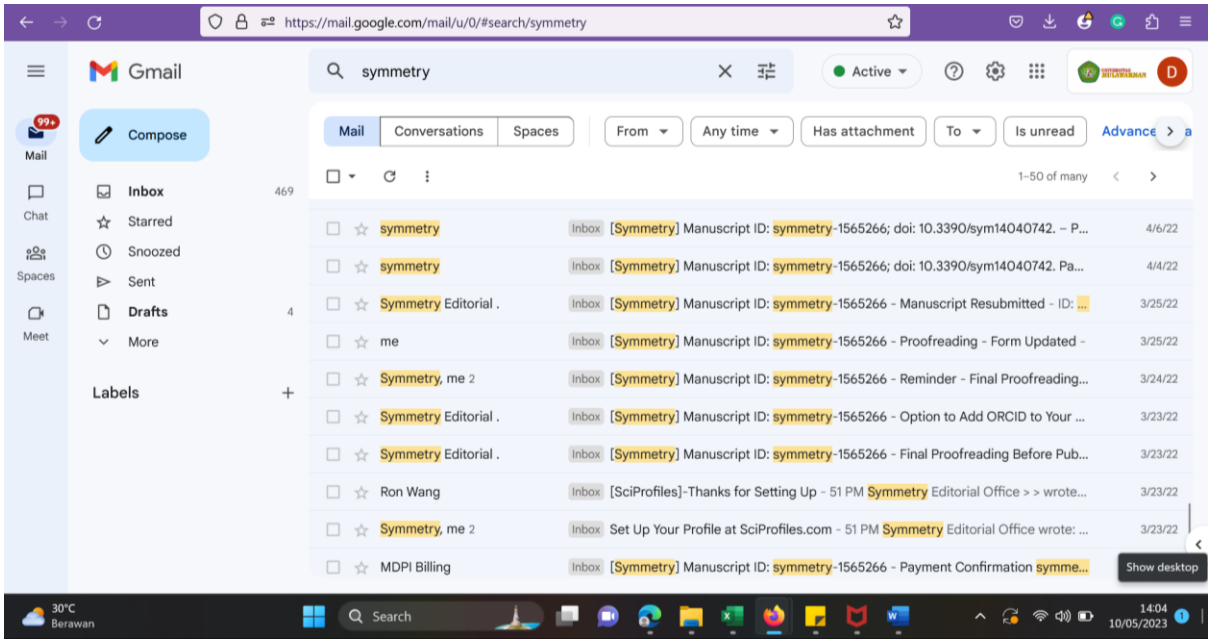

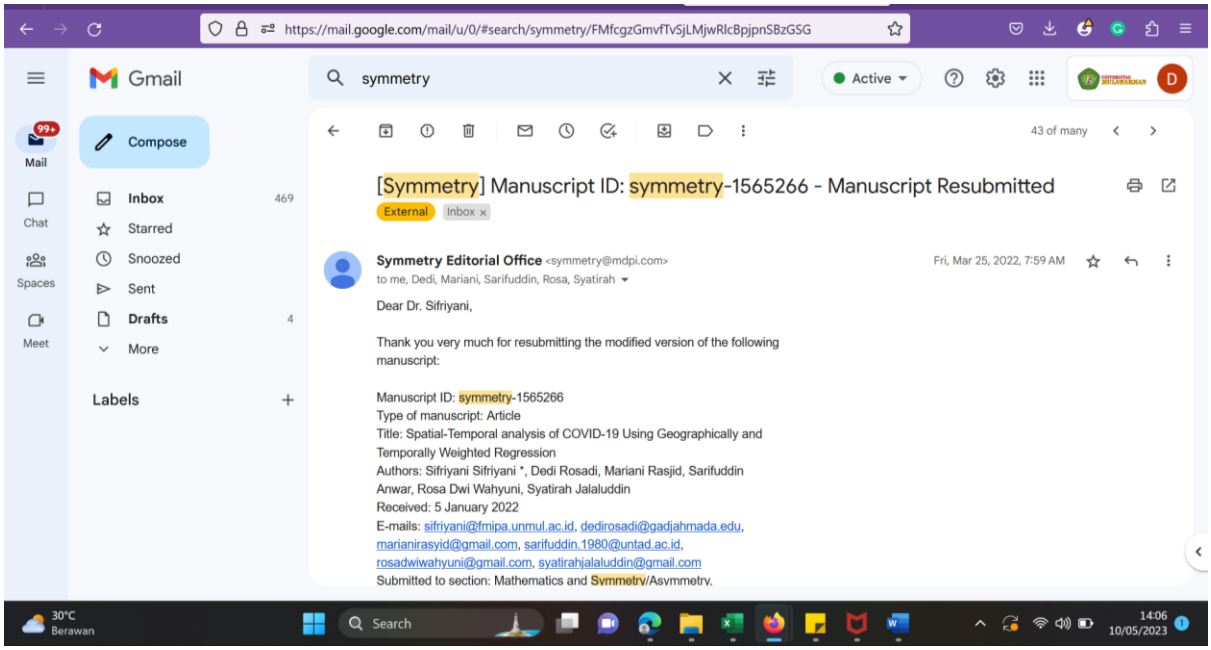
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Fri, Mar 25, 2022, 7:59 AM
to me, Dedi, Mariani, Sarifuddin, Rosa, Syatirah
Dear Dr. Sifriyani,
Thank you very much for resubmitting the modified version of the following manuscript:
Manuscript ID: symmetry-1565266
Type of manuscript: Article
Title: Spatial-Temporal analysis of COVID-19 Using Geographically and Temporally Weighted Regression
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Submitted to section: Mathematics and Symmetry/Asymmetry.
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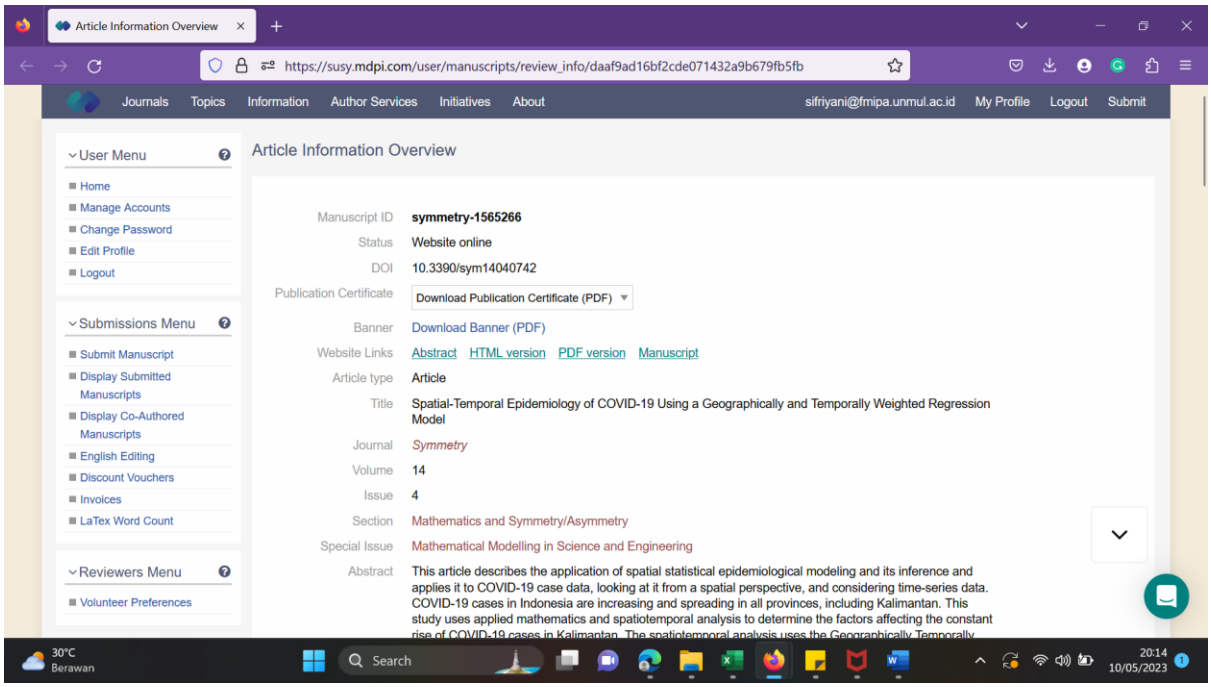
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Article type Article
Title Spatial-Temporal Epidemiology of COVID-19 Using a Geographically and Temporally Weighted Regression Model
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Volume 14
Issue 4
Section Mathematics and Symmetry/Asymmetry
Special Issue Mathematical Modelling in Science and Engineering
Abstract This article describes the application of spatial statistical epidemiological modeling and its inference and applies it to COVID-19 case data, looking at it from a spatial perspective, and considering time-series data. COVID-19 cases in Indonesia are increasing and spreading in all provinces, including Kalimantan. This study uses applied mathematics and spatiotemporal analysis to determine the factors affecting the constant
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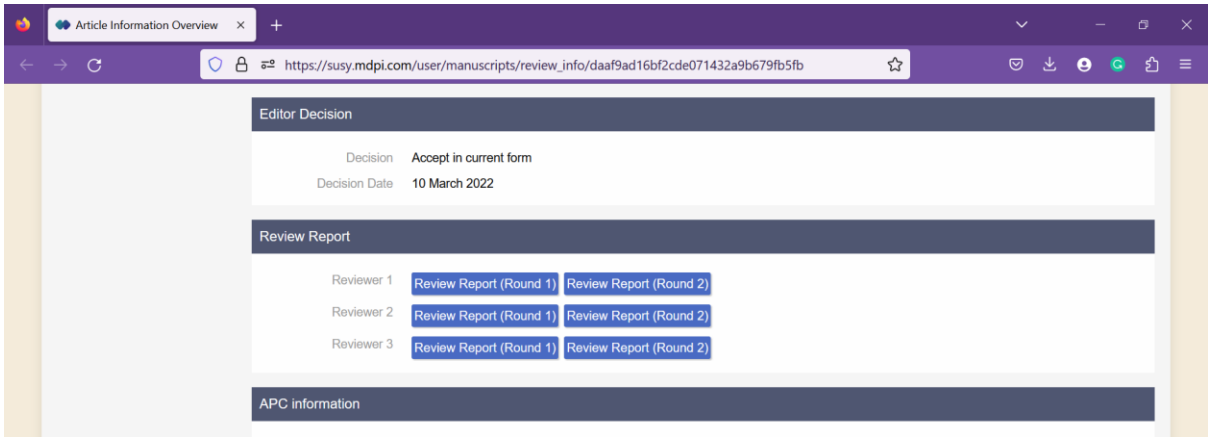
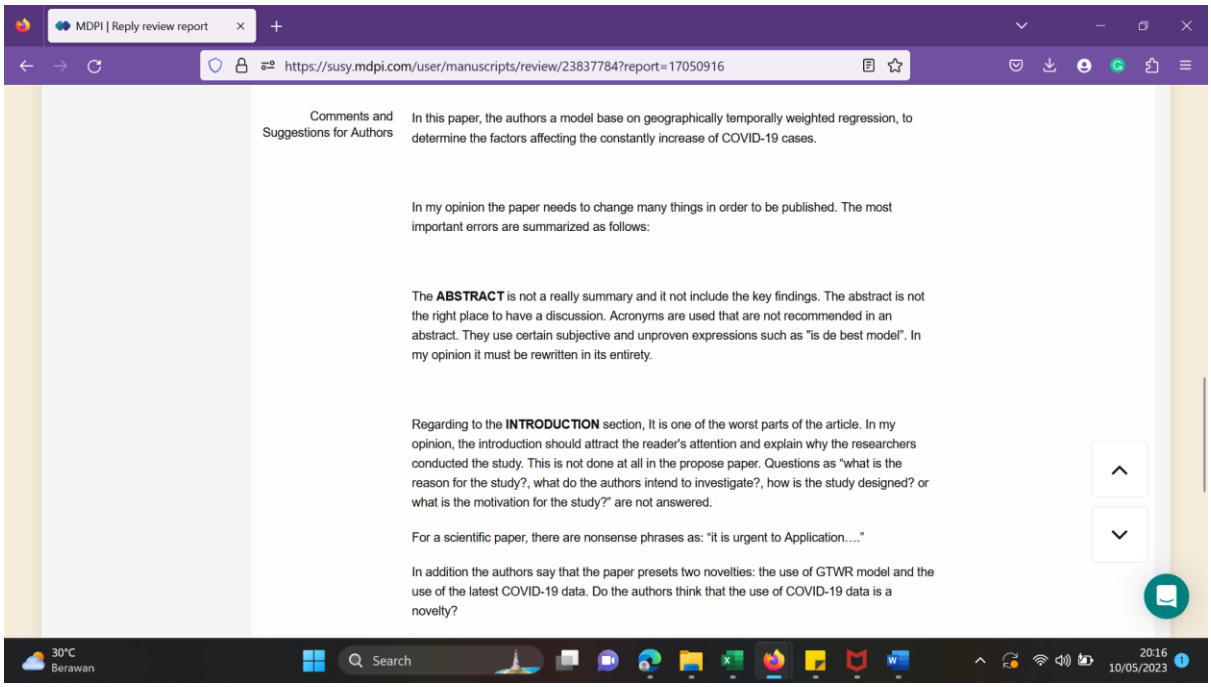


Review Report 1



Comments and Suggestions for Authors

In this paper, the authors a model base on geographically temporally weighted regression, to determine the factors affecting the constantly increase of COVID-19 cases.

In my opinion the paper needs to change many things in order to be published. The most important errors are summarized as follows:

The **ABSTRACT** is not a really summary and it not include the key findings. The abstract is not the right place to have a discussion. Acronyms are used that are not recommended in an

abstract. They use certain subjective and unproven expressions such as "is de best model". In my opinion it must be rewritten in its entirety.

Regarding to the **INTRODUCTION** section, It is one of the worst parts of the article. In my opinion, the introduction should attract the reader's attention and explain why the researchers conducted the study. This is not done at all in the propose paper. Questions as "what is the reason for the study?, what do the authors intend to investigate?, how is the study designed? or what is the motivation for the study?" are not answered.

For a scientific paper, there are nonsense phrases as: "it is urgent to Application…."

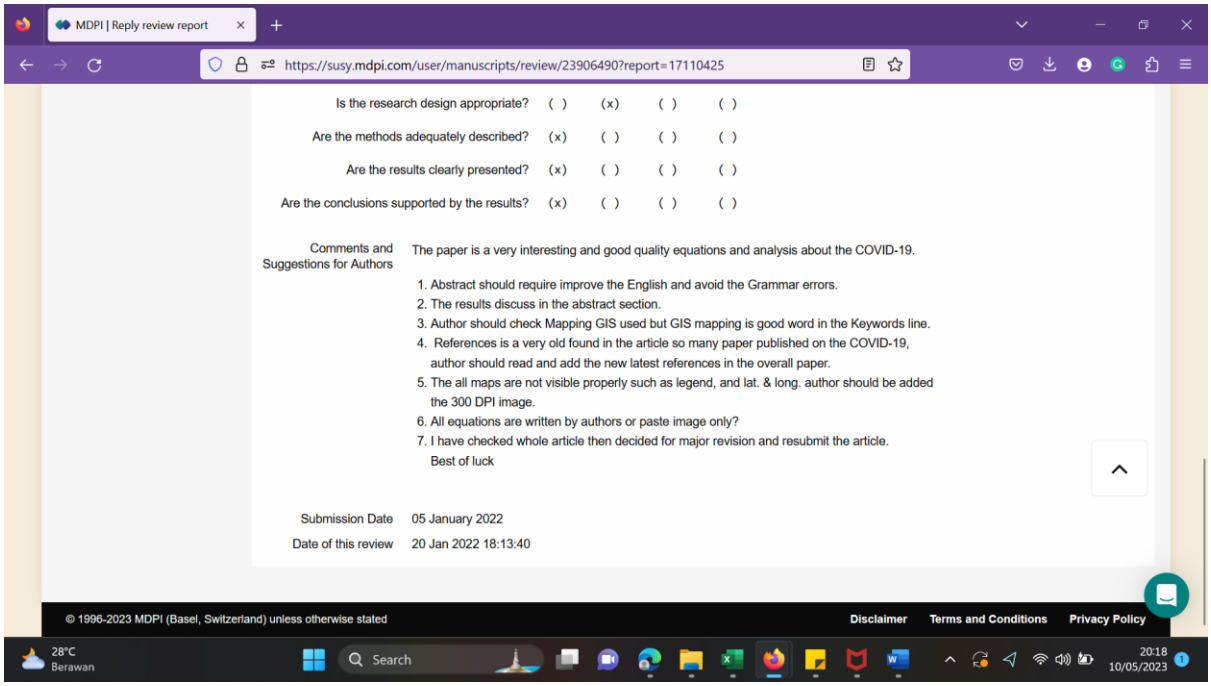
In addition the authors say that the paper presets two novelties: the use of GTWR model and the use of the latest COVID-19 data. Do the authors think that the use of COVID-19 data is a novelty?

In short, superfluous and unnecessary information is added but the main information is omitted. It must be changed.

In section two there are some preliminaries and data (subsections 2., 2.2, 2.3 and 2.4.1) and the main part of the paper, the methodology used in the model (subsection 2.4.2). The authors must divide this section in two: 3. Preliminaries and Data; 4. Methodology.

In section 2.4.2 de the author must to include a flowchart, this helps to describe how the paper works.

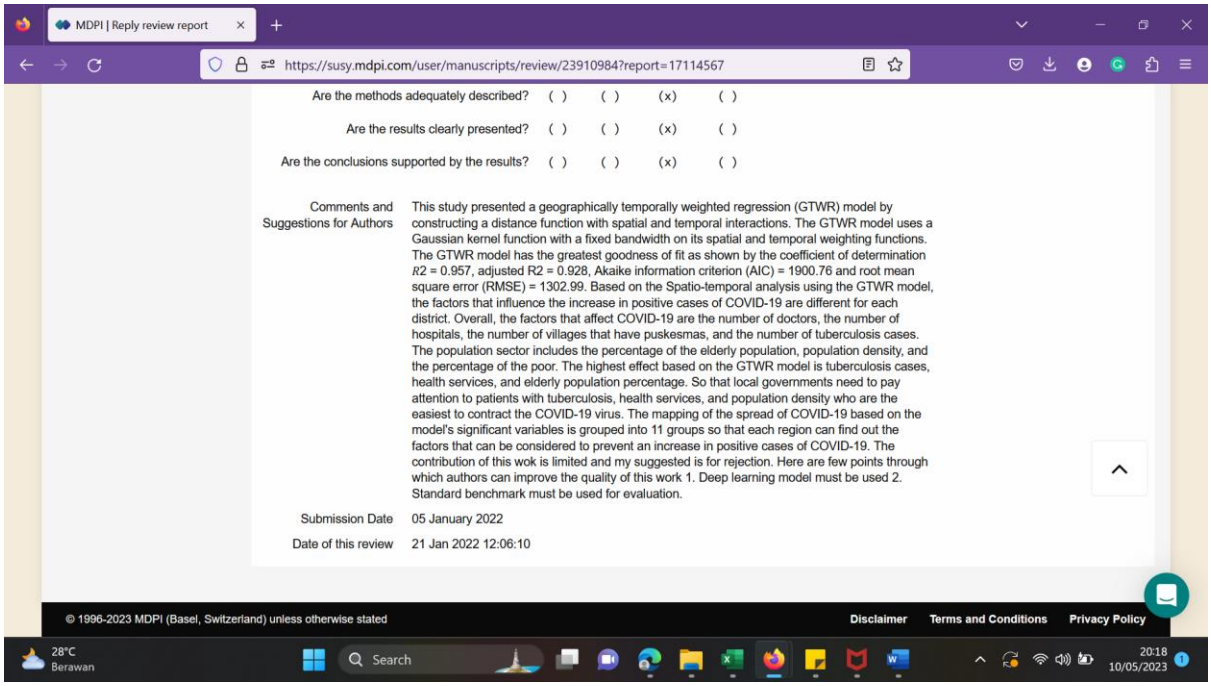
RESULTS and DISCUSSION section is, without a doubt, the best of the paper, but even so, it must be improved. In my opinion, the section must be divided into two parts: Experimental Results and Discussion. In the first part, the results of the different parts of the model should be shown: Spatial distribution mapping, description of covid-19 cumulative data..., GTWR. In the Discussion section a study and analysis of the results should be carry out with their advantages over other existing models. In fact, a comparison with other models is not made, and this makes the paper a bit weak.



Comments and Suggestions for Authors

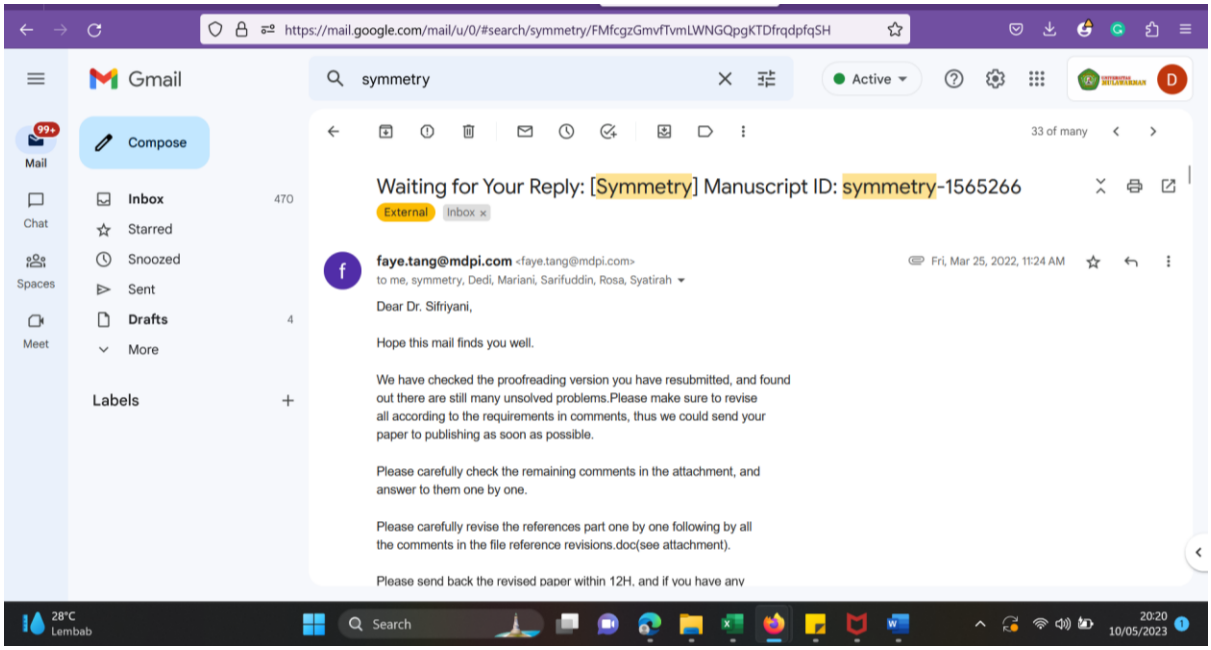
The paper is a very interesting and good quality equations and analysis about the COVID-19.

1. Abstract should require improve the English and avoid the Grammar errors.
2. The results discuss in the abstract section.
3. Author should check Mapping GIS used but GIS mapping is good word in the Keywords line.
4. References is a very old found in the article so many paper published on the COVID-19, author should read and add the new latest references in the overall paper.
5. The all maps are not visible properly such as legend, and lat. & long. author should be added the 300 DPI image.
6. All equations are written by authors or paste image only?
7. I have checked whole article then decided for major revision and resubmit the article. Best of luck



Comments and Suggestions for Authors

This study presented a geographically temporally weighted regression (GTWR) model by constructing a distance function with spatial and temporal interactions. The GTWR model uses a Gaussian kernel function with a fixed bandwidth on its spatial and temporal weighting functions. The GTWR model has the greatest goodness of fit as shown by the coefficient of determination *R*2 = 0.957, adjusted R2 = 0.928, Akaike information criterion (AIC) = 1900.76 and root mean square error (RMSE) = 1302.99. Based on the Spatio-temporal analysis using the GTWR model, the factors that influence the increase in positive cases of COVID-19 are different for each district. Overall, the factors that affect COVID-19 are the number of doctors, the number of hospitals, the number of villages that have puskesmas, and the number of tuberculosis cases. The population sector includes the percentage of the elderly population, population density, and the percentage of the poor. The highest effect based on the GTWR model is tuberculosis cases, health services, and elderly population percentage. So that local governments need to pay attention to patients with tuberculosis, health services, and population density who are the easiest to contract the COVID-19 virus. The mapping of the spread of COVID-19 based on the model's significant variables is grouped into 11 groups so that each region can find out the factors that can be considered to prevent an increase in positive cases of COVID-19. The contribution of this wok is limited and my suggested is for rejection. Here are few points through which authors can improve the quality of this work 1. Deep learning model must be used 2. Standard benchmark must be used for evaluation.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Fri, Mar 25, 2022, 11:24 AM
Dear Dr. Sifriyani,
Hope this mail finds you well.
We have checked the proofreading version you have resubmitted, and found out there are still many unsolved problems.Please make sure to revise all according to the requirements in comments, thus we could send your paper to publishing as soon as possible.
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