

## Peer Review File

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**Reviewer A:** The paper discusses the role of AI in the management of the COVID-19 pandemic. The paper attempts to tie in different areas together highlight the importance of developing new AI applications to combat the challenges introduced by COVID-19. However, it is hard to justify the key contributions of this paper as reads pretty shallow in terms of technical depth. Here are some detailed comments that might help the authors rewrite the article:

**Comment 1:** The manuscript reads quite abstract with no specific goals or purpose. It sways between various topics without clear connections between them. Several components of AI research involved in the alleviation efforts for COVID-19 are presented but with a minimal justification of their discussions (e.g., Paragraph 3 talks about the data generated during COVID-19 but does not highlight the key challenges involved with the processing, interpretation, collection of the data).

**Reply 1:** We thank the reviewer for the very thoughtful insights and comments. We have tried to address the concerns and have substantially changed the paper. We are limited by 1000 words and 10 references and have deleted certain parts of the paper so that we could go over the important aspects with more detail focus and references.

**Comment 2:** A big portion of the discussions read superficial and are not backed up by sufficient examples or evidence.

**Reply 2:** We have made it more focused and added more references to back up our assertions.

**Comment 3:** (Continuing to my previous comment) Lack of references to scholarly articles/peer-reviewed publications throughout the paper. The paper makes various claims which read more like subjective opinions rather than facts. For instance, in Paragraph 2 the authors mention "...unexpected collaboration between different disciplines. Entities which were previous competitors...", but does not present any reference to back it up. Another similar example is the beginning of Paragraph 3: "COVID-19 pandemic has produced a large number of...data" where again, there is no citation to back up the claim.

**Reply 3:** We are limited by 1000 words and 10 references. We have cut back on a few segments and we have added more references

**Comment 4:** It is not clear what the authors imply by "shortcut learning" and "COVID symptom study app" in Paragraph 3. Elaboration of such terms/concepts is necessary to realize the rationale for their discussion.

**Reply 4:** Since we are limited to 1000 words, we have deleted the section on shortcut learning and the COVID symptom study app.

**Comment 5:** One of the only portions of the entire writing that reads useful is Paragraph 6: "The large amount of...a new era in artificial intelligence". However, this also reads a bit abstract and disoriented. The paragraph can be broken down into several shorter paragraphs with a clear focus on each topic (rather than piling them up into a single paragraph with shallow discussions).

**Reply 5:** We have broken down that section into multiple small paragraphs

### **Reviewer B**

**Comment 1:** This paper is only a review and description of the current phenomenon of artificial intelligence in the COVID-19 epidemic, and it is a short article. It is suggested that the author should describe the legal norms and revise the grammar and wording, which should be acceptable for publication. Artificial intelligence has indeed shown its prominence in this epidemic, but the calculations of artificial intelligence will also produce errors in big data, especially errors in previous assumptions and programming, and even due to deviations in knowledge. In the future, the calculation of artificial intelligence will be able to reduce the risk of cognitive bias through the mechanism of sharing platforms and combining the views of each direction.

**Reply 1:** We thank the reviewer for the comments and have described the legal and ethical issues and have revised the grammar and wording.

### **Reviewer C**

**Comment 1:** Thanks for the narrative description of how the COVID-19 pandemic has impacted the adoption of AI in healthcare. However, I am not sure I agree with your optimistic review of the impact of AI during this pandemic. While there have been pockets of brilliance in which, AI has shown its ability to garner useful insights from various modalities, generally the hype has exceeded the reality. From that perspective, I don't agree that the pandemic has changed how AI is perceived or adopted in healthcare. I recommend revising the letter to reflect the realities of adoption of AI in healthcare and highlight advances like transformers, deep learning to discover protein folds, automated medical imaging advances that have developed irrespective of the pandemic, rather than cast COVID having a role in AI's progress.

**Reply 1:** We appreciate the reviewers' comments. We agree that the hype has exceeded the reality. The significant growth in AI applications, AI publications and AI patents since the pandemic points to a significant growth in AI as a result of the pandemic. We expect this to grow substantially as there is more digital transformation, cooperation and innovation as the pandemic continues. We have revised the paper substantially with more focus on transformers, Alphafold, and AI imaging.