Response to Reviewer 1 Comments

General Comments: xxx

Response: Thank you for your comments. We have made revisions in accordance with the questions raised by all of the reviewers and checked the format and language according to the requirements of the journal. All revisions have strived to meet the publication standards of the journal.

Response to Reviewer 2 Comments

Point 1: In the Theory driven aspect of computational psychiatry - what were the different variables ?

Response 1: Thank you for your kind comments. Due to the inaccurate translation of the language, the expression here is ambiguous, and the original meaning is the following: the theory-driven approach, which originates from computational neuroscience, focuses more on the mechanically explicable relationships between mathematical variables, aiming to construct models to understand the mechanisms of psychosis (Huys et al., 2016).

Point 2: What precautions were taken regarding the data-anonymity ?

Response 2: Thank you for the constructive advice. From four ethical principles, we elaborated on the preventive measures that should be enacted for data anonymity.

"*According to four basic ethical principles (respect, no harm, benefit, and justice), researchers should fully respect the independent will of data providers when collecting and using data, as well as pay attention to the protection of their personal privacy and process data anonymously. In addition, the participants' rights and interests should be the first priority. Justice and fairness should be adhered to. Moreover, informed consent should be obtained, and the process should be open and fair.*"

Point 3: Open AI platforms like AI Gym - how they stored the data and maintain anonymity ?

Response 3: Thank you for your kind comments. We believe that Open AI platforms (as a large language model) have no conscious action at this stage, and the developers of Open AI have not been forced to identify users' information (although registration is required). From our current point of view, we agree that it is very important to protect users' data. On the technical level, the question of how to protect users (or medical patients) is a very important topic. Although we do not have a particularly mature idea at present, the relevant literature and platforms do not have clear viewpoints. We illustrate this scenario for future studies and hope that future researchers can solve this problem.

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Point 4: Sensitivity and specificity of supervised , unsupervised or semi-supervised applications ? Which are superior accordance to the present literature ?

Response 4: We are grateful for your professional and valuable opinions. According to current information, we believe that semisupervised applications may be better, which is a method of learning between supervised learning and unsupervised learning. Supervised learning refers to learning in the presence of marked information in the sample set, unsupervised learning refers to learning in the absence of marked information in the sample set, and semisupervised learning

refers to learning in the presence of both marked and unmarked data in the sample set. Compared with supervised learning, semisupervised learning uses less marked information, which decreases the time and cost of marking. Moreover, unmarked data can be used for learning, which helps to improve the learning effect.

Point 5: Please mention the different biomarkers present in blood to assess mental disorders ?

Response 5: Thank you for your kind suggestion. We have added the literature on the presence of different biomarkers in the blood to assess psychiatric disorders.

References：

William R. Reay, Michael P. Geaghan, Joshua R. Atkins, Vaughan J. Carr, Melissa J. Green, Murray J. Cairns. Genetics-informed precision treatment formulation in schizophrenia and bipolar disorder. *The American Journal of Human Genetics* 2022;**109**:1620-1637. [9502060DOI: 10.1016/j.ajhg.2022.07.011]

IU School of Medicine. Researchers Develop Blood Test For Depression, Bipolar Disorder. EurekAlert 2021. https://www.eurekalert.org/pub_releases/2021-04/iuso-iso040721.php

Point 6: What were the anomalies in colour vision noted in the patients of schizophrenia ?

Response 6: We appreciate your helpful advice, and we have further explained abnormal color vision in patients with schizophrenia. Abnormal color vision refers to the lack or inability of visual organs to perceive color vision, which is clinically classified as color weakness or color blindness. Color blindness refers to the loss of color discrimination, and color weakness refers to the decreasing ability to recognize colors. Research has shown that people with mental illness are less able to discriminate colors than the general population.

Response to Reviewer 3 Comments

General Comments:

The article is within the scope of the journal and deals with an interesting topic. It is well written. The reading is fluent. The content of the article deals with a review of the application of artificial intelligence in psychiatry. The contribution of the article is interesting, however to be accepted it requires some improvements

Point 1: It should explain what type of review has been carried out, the sources consulted, the criteria used to carry out the review.

Response 1: Thank you for your helpful comments. We have supplemented the methods and sources of the literature.

Point 2: A discussion section is necessary where the results obtained in the review are established: current lines of work, relationship between the reviewed works, trends,....

Response 2: We appreciate your careful reading. Due to the fact that the journal requires that the review paper should not include a discussion section, we did not write this part. For the discussion of future tendencies, we have mentioned this information in the challenge section.

Point 3: In the conclusion section, the scientific contribution of the work should be synthesized and lines of future work should be established.

Response 3: Thank you for your constructive suggestion. Based on existing research, we proposed our expectations for future research. Specifically, the construction of an AI ecosystem for computational psychiatry can help researchers to clarify their work. Based on this scenario, better algorithms and techniques to analyze complex datasets should be further developed. More rigorous and standardized experimental methods and collaboration with policy-makers and advocacy groups should be established to ensure that the findings of computational psychiatry can be translated into practical applications. When considering that the use of artificial intelligence needs to experience a series of ethical problems caused by computing technology, the establishment of relevant application standards and moral guidelines should be emphasized. Furthermore, future research should focus on the integration of computational psychiatry with other disciplines, such as psychology, neuroscience, and genetics. Through the combination of multidisciplinary applications with multidisciplinary expertise, researchers can gain a more comprehensive understanding of mental illness and develop more effective treatments and interventions.