

Machine learning in orthopaedic surgery

Dear Reviewers and Editors,

The authors of this team thank you for your time spent in evaluation of this manuscript. We hope that you found this article valuable to the readership of *World Journal of Orthopedics*. The reviewers have provided excellent feedback to increase the impact of our article. We have revised the manuscript per the reviewer comments and feel that this has substantially increased the quality of this paper. Please find these revisions below with specific changes highlighted in the author response column. To facilitate viewing our response to reviewer comments, a supplemental file has been added to the submission that contains these responses in a table format. The reviewer's will find that the manuscript also reflects the same highlighted changes. We hope that all comments were sufficiently addressed. If there are any additional concerns with this manuscript, please do not hesitate to contact us.

Sincerely,

Joseph N. Liu, MD

RESPONSE TO REVIEWERS

Reviewer Comment	Author Response
Reviewer #1	---
Section: What is ML? Why not to mention artificial neural networks among the ML tool mentioned? ANN are also applied as conventional ML tool.	Thank you for your critique. We have changed the sentence to the following: "On the other hand, more recently developed DL algorithms and artificial neural networks (ANN) are used to extract knowledge from imaging data sets." Additionally, we have included a numbering system in our revised manuscript that places the DL and ANN section as a subsection underneath the Types of ML subsection.
Does in "... ML requires computer systems to "learn" patterns..." "computer systems" mean "software". "Software" would be more suitable.	Thank you for this suggestion. We have resolved this issue as follows: "Regardless of which algorithms are used, ML requires software to "learn" patterns or relationships from sets of empirical data."
Section: Types of ML "More often than not, ..." ??? What does it mean?	Thank you for this feedback. We understand this phrase can cause the sentence to be confusing. Therefore, we have changed the phrase to "Usually" as shown below: "Usually, supervised learning is used because it requires the least amount of data and thus the least amount of time to learn."
Section: DL and Artificial Neural Networks (ANN) What about predictive function of CNN? Predicting values by CNN based on images is also applied. May be not in medical applications but	Thank you for bringing forth this great point. When we describe the classification function of CNN, it is implied that the predictive function is part of this process. Through the training process, the CNN will learn to

generally is one of their function. DL term refers also to the case where sound files (not only images) serves as an input.	make classification decisions on never before seen images which inherently means it learns to predict.
The last paragraph on page 5. "DL algorithms, such as ANN and CNN..." ANN are applied not exclusively for DL. Please consider the shape of the sentence: DL algorithms have been applied... Then the tense. I would say: DL algorithms are successfully applied....	We appreciate this grammar correction. We have changed the sentence to the following: "DL algorithms have been successfully applied to complex problems to improve diagnostic accuracy and speed, flag the most critical and urgent patients for immediate attention, reduce the amount of human error, reduce the strain on medical professionals, and improve orthopaedic care."
<i>Science Editor</i>	---
1 Scientific quality: The manuscript describes a Review of the machine learning in orthopaedic surgery. The topic is within the scope of the WJO. (1) Classification: Grade B; (2) Summary of the Peer-Review Report: The article is a very good review. The presented statements proves the understanding of machine learning tool. Some sentences need to be polished. The questions raised by the reviewers should be answered; (3) Format: There are 4 tables and 6 figures; (4) References: A total of 90 references are cited, including 33 references published in the last 3 years; (5) Self-cited references: There are 1 self-cited references; and (6) References recommendations (kindly remind): The authors have the right to refuse to cite improper references recommended by the peer reviewer(s), especially references published by the peer reviewer(s) him/herself (themselves). If the authors find the peer reviewer(s) request for the authors to cite improper references published by him/herself (themselves), please send the peer reviewer's ID number to editorialoffice@wjgnet.com . The Editorial Office will close and remove the peer reviewer from the F6Publishing system immediately.	Dear science editor, thank you for your evaluation of this manuscript. We appreciate your time spent in review.
2 Language evaluation: Classification: Grade B. The authors are native English speakers.	Thank you.
3 Academic norms and rules: No academic misconduct was found in the Bing search.	Thank you for your comment.
4 Supplementary comments: This is an invited manuscript. No financial support was obtained for the study. The topic has not previously been published in the WJO.	Thank you for your support. We hope your readership appreciates the novelty of our review.
5 Issues raised: (1) The "Author Contributions" section is missing. Please provide the author contributions	Thank you for this correction. We have included the following in our revised manuscript: "Author contributions: All authors made significant contributions toward the preparation of this manuscript."

5 Issues raised: (2) The authors did not provide original pictures. Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor.	Thank you for raising this issue. We have compiled a PowerPoint of all images used including figure titles and proper citations.
5 Issues raised: (3) Please obtain permission for the use of picture(s). And please cite the reference source in the references list. If the author fail to properly cite the published or copyrighted picture(s) or table(s) as described above, he/she will be subject to withdrawal of the article from BPG publications and may even be held liable.	Thank you for raising this concern. All but one of our images come from open access articles which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. For the only image that is not from an open access article (Figure 5), we have included the license. Additionally, we have cited all reference sources in our references list.
6 Recommendation: Conditional acceptance.	We are highly appreciative for your feedback and acceptance.
<i>Company editor-in-chief</i>	---
I have reviewed the Peer-Review Report, full text of the manuscript, and the relevant ethics documents, all of which have met the basic publishing requirements of the World Journal of Orthopedics, and the manuscript is conditionally accepted. I have sent the manuscript to the author(s) for its revision according to the Peer-Review Report, Editorial Office's comments and the Criteria for Manuscript Revision by Authors.	Dear company editor-in-chief, thank you for taking the time to review our article.