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PEER-REVIEW REPORT

Name of journal: *World Journal of Hepatology*

Manuscript NO: 68616

Title: Deep learning in hepatocellular carcinoma: Current status and future perspectives

Reviewer's code: 00505584
Position: Editorial Board
Academic degree: FACS, MD

Professional title: Full Professor, Professor, Surgical Oncologist

Reviewer's Country/Territory: France

Author's Country/Territory: United States

Manuscript submission date: 2021-05-28

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-05-29 08:59

Reviewer performed review: 2021-05-29 18:50

Review time: 9 Hours

Scientific quality	[Y] Grade A: Excellent [ ] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[Y] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No
Peer-reviewer statements	Peer-Review: [ ] Anonymous [Y] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

This is an excellent review articele on the role of Deep learning in the management of hepatocellular carcinoma. It is well-written and comprehensive. I only have 2 small suggestions: 1. Pleqse define "multi-omics" in the manuscript as I don't know if most readers of our journal will know to what you are referring. 2. Many readers are interested in robotics and autonomous actions. It is a controversial topic, with some authors thinking that we are far away from autonomy and other authors thinking that there are already examples of autonpomous actions in surgery. Hashimoto DA, Rosman G, Rus D, Meireles OR. Artificial Intelligence in Surgery: Promises and Perils. Ann Surg. 2018 Jul;268(1):70-76. doi: 10.1097/SLA.0000000000002693. PMID: 29389679; PMCID: PMC5995666. Gumbs AA, Perretta S, d'Allemagne B, Chouillard E. What is Artificial Intelligence Surgery?. Art Int Surg 2021;1:1-10. http://dx.doi.org/10.20517/ais.2021.01 What do you think of these diverging opinions? And more importantly, what is the future role of Deep learning in getting us towards autonomous actions? Evaluation of Surgical Skills during Robotic Surgery by Deep Learning-Based Multiple Surgical Instrument Tracking in Training and Actual Operations J. Clin. Med. 2020, 9, 1964; doi:10.3390/jcm9061964 Evaluation of Deep Learning Models for Identifying Surgical Actions and Measuring Performance ShujaKhalid,MSc;MitchellGoldenberg,MBBS,PhD;TeodorGrantcharov,MD,PhD;BabakTaati,PhD;FrankRudzicz,PhD Is it limited to evaluating surgical skills only, or will it lead us towards autonomous robotics? Degrave J, Hermans M, Dambre J, Wyffels F. A Differentiable Physics Engine for Deep Learning in Robotics. Front Neurorobot. 2019 Mar 7;13:6. doi: 10.3389/fnbot.2019.00006. PMID: 30899218; PMCID: PMC6416213.

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PEER-REVIEW REPORT

Name of journal: *World Journal of Hepatology*

Manuscript NO: 68616

Title: Deep learning in hepatocellular carcinoma: Current status and future perspectives

Reviewer's code: 05872335
Position: Editorial Board
Academic degree: MS

Professional title: Academic Fellow, Research Scientist

Reviewer's Country/Territory: Pakistan

Author's Country/Territory: United States

Manuscript submission date: 2021-05-28

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-05-29 02:32

Reviewer performed review: 2021-06-06 12:18

Review time: 8 Days and 9 Hours

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [ ] Grade C: Good [Y] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [ ] Grade B: Minor language polishing [Y] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [Y] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No
Peer-reviewer statements	Peer-Review: [ ] Anonymous [Y] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

- Title is good and relevant. - Table 1 actually depicts all the previous study been done on the relevant problem of applying deep learning on hepatocellular carcinoma currently and in future. - Emphasis is seen in the paper but the paper discusses more on the disease and its diagnostic measures rather explaining the AI and deep learning expect of it. - I would recommend to incorporate some technical expertise related information and details related to the application of deep learning in past, present and future.

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RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: *World Journal of Hepatology*

Manuscript NO: 68616

Title: Deep learning in hepatocellular carcinoma: Current status and future perspectives

Reviewer's code: 05872335
Position: Editorial Board
Academic degree: MS

Professional title: Academic Fellow, Research Scientist

Reviewer's Country/Territory: Pakistan

Author's Country/Territory: United States

Manuscript submission date: 2021-05-28

Reviewer chosen by: Jia-Ping Yan

Reviewer accepted review: 2021-08-03 03:23

Reviewer performed review: 2021-08-03 10:26

Review time: 7 Hours

Scientific quality	[Y] Grade A: Excellent [ ] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [Y] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection
Peer-reviewer statements	Peer-Review: [ ] Anonymous [Y] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

Paper is good as a mini-review paper of how deep learning would leverage the

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diagnosis and prognosis of HCC in future. The paper holds significance for the field of recent advancements in SmartHealth. As a review paper is limited to identify the connection of deep learning to diagnose HCC in future but would require the intervention of technology experts to take it forward for implementation.