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PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastrointestinal Endoscopy

Manuscript NO: 67312

Title: Deep Learning applied to the imaging diagnosis of hepatocellular carcinoma

Reviewer's code: 05736510

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Viet Nam

Author's Country/Territory: Brazil

Manuscript submission date: 2021-04-21

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-04-22 10:55

Reviewer performed review: 2021-04-29 03:23

Review time: 6 Days and 16 Hours

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [Y] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] 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: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

The entitled paper is "Artificial intelligence for imaging diagnosis of hepatocellular carcinoma". The authors presented the ability of some AI (Artificial intelligence) approaches to early diagnosis of hepatocellular carcinoma. In this manuscript, there are lots of defects that should be carefully addressed: • The authors started with a very wide title (using AI) and this title didn't agree with the text of this manuscript. The text was talking about the applicability of the deep learning approach. • There were few cases have been reported in this manuscript. The review paper should include more cases to provide good information and understanding to readers and researchers. • It is very significant in applying AI models to prepare the data for these approaches. The common processes are; 1- data normalization or data standardization, 2- dimensionality reduction which is done using several approaches, 3- cleaning the data. I haven't seen the authors talk about these processes. • The authors said that deep learning required few images to train and thus requiring less computational time. The authors are required to cite more evidence and sources. • In this manuscript, the deep learning system and CNN approach were extensively mentioned. It is significant to discuss other AI models such as support vector machine, random forest, and tree decision, and so on. • The statistical criterion used for assessing the prediction accuracy of AI models is also very significant. Herein, the authors mentioned only the accuracy which is not sufficient. •

In the last pagraph of this manuscript, the the authors discussed the advantages and disadvantages of the Deep learning approach. However, few cases could not give you a clear decision of the superiority of the Deep learning approach over other approaches which you didn't discuss! The other observation that the authors mentioned that there is a defect in the deep learning techniques. Therefore, they are required to explain what is the problematic issue regarding deep learning techniques. • There are no significant recommendations • There are no constructive assessments for the cited AI

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approaches.

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PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastrointestinal Endoscopy

Manuscript NO: 67312

Title: Deep Learning applied to the imaging diagnosis of hepatocellular carcinoma

Reviewer's code: 05261716
Position: Peer Reviewer
Academic degree: MD, PhD
Professional title: Associate Chief Physician, Associate Professor
Reviewer's Country/Territory: China
Author's Country/Territory: Brazil

Manuscript submission date: 2021-04-21
Reviewer chosen by: Ya-Juan Ma
Reviewer accepted review: 2021-04-29 04:02
Reviewer performed review: 2021-05-02 08:01
Review time: 3 Days and 3 Hours

Scientific quality	[Y] Grade A: Excellent [ ] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] 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
Re-review	[ ] Yes [Y] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

I red this manuscript and found that I am unfamiliar with this topic. So I suggest that the editor assign the new reriewer to this manuscript.

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PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastrointestinal Endoscopy

Manuscript NO: 67312

Title: Deep Learning applied to the imaging diagnosis of hepatocellular carcinoma

Reviewer's code: 03011106

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Japan

Author's Country/Territory: Brazil

Manuscript submission date: 2021-04-21

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-04-21 02:52

Reviewer performed review: 2021-05-04 05:54

Review time: 13 Days and 3 Hours

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] 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: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

Authors had reviewed recent technical advances in diagnosis of HCC I would suggest following to make this manuscript more appealing They should discuss in each methods as 1) technology 2) clinical applications 3) pros and cons 4) cost implications

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PEER-REVIEW REPORT

Name of journal: Artificial Intelligence in Gastrointestinal Endoscopy

Manuscript NO: 67312

Title: Deep Learning applied to the imaging diagnosis of hepatocellular carcinoma

Reviewer's code: 03476715
Position: Editorial Board
Academic degree: MD, PhD

Professional title: Professor

Reviewer's Country/Territory: China

Author's Country/Territory: Brazil

Manuscript submission date: 2021-04-21

Reviewer chosen by: Ya-Juan Ma

Reviewer accepted review: 2021-05-03 04:54

Reviewer performed review: 2021-05-11 14:42

Review time: 8 Days and 9 Hours

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] 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: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

The article described the progress of artificial intelligence for imaging diagnosis of hepatocellular carcinoma. Although there are some merits in this study, several issues should not be ignored. 1. This paper needs further proofreading, the text contains word error, such as "a deep learning system (DPS) based in convolutional neural networks (CNN)" should be change to "deep learning system (DLS)". 2. The author should add the comparison between the accuracy of artificial intelligence and biomarkers (or combining multiple biomarkers) in predicting the presence of hepatocellular carcinoma, e.g. AFP, DCP, AFP-L3. To date, combining multiple biomarkers to improve diagnostic accuracy is very important. 3. Due to the diversity of liver tumor and complex imaging features, the application of artificial intelligence in the diagnosis of hepatocellular carcinoma is still challenging. In addition to HCC, primary malignant tumors in the liver include intrahepatic cholangiocarcinoma (ICC), mixed hepatocellular-cholangiocarcinoma (HCC-CC), and other rare tumors. In addition, there are many types of benign tumors in the liver, such as cysts, hemangiomas, focal nodular hyperplasia (FNH), adenomas, high-risk cirrhotic nodules. Can artificial intelligence diagnose and rule out these diseases? The author should add that. 4. It is helpful to add a table for the comparison of different CLASSIFICATION OF THE ALGORITHM.

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RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: Artificial Intelligence in Gastrointestinal Endoscopy

Manuscript NO: 67312

Title: Deep Learning applied to the imaging diagnosis of hepatocellular carcinoma

Reviewer's code: 05736510
Position: Peer Reviewer
Academic degree: MD
Professional title: Doctor
Reviewer's Country/Territory: Viet Nam
Author's Country/Territory: Brazil

Manuscript submission date: 2021-04-21
Reviewer chosen by: Jia-Ru Fan
Reviewer accepted review: 2021-06-15 13:46
Reviewer performed review: 2021-06-15 15:13
Review time: 1 Hour

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

SPECIFIC COMMENTS TO AUTHORS

After reviewing the manuscript, I found that the authors have addressed the majority of

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issues and there are still two important issues that should be addressed before publishing this paper I. I can see the structure of the paper includes only, abstract, introduction, and conclusion. Therefore, there must be section discusses the evaluation of the previous researches and recommendations. Here, authors can take off some paragraphs from the introduction and add them to the new section. II.The other crucial note related to the conclusion. I can currently see that the topic of the paper is about deep learning and I cannot see the authors are highlighting that. Please develop the conclusion and put the most important information that you gain.