



PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 57242

Title: Artificial intelligence technologies for the detection of colo-rectal lesions: The future is now

Reviewer’s code: 00039316

Position: Editorial Board

Academic degree: FEBG, MD, PhD

Professional title: Associate Professor

Reviewer’s Country/Territory: Greece

Author’s Country/Territory: Italy

Manuscript submission date: 2020-06-02

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-06-03 04:35

Reviewer performed review: 2020-06-03 04:48

Review time: 1 Hour

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 Grade E: Do not publish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



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SPECIFIC COMMENTS TO AUTHORS

Very well written manuscript. To improve it 1. Explain the differences between the 2 available systems 2. Reference 26 is incomplete



PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 57242

Title: Artificial intelligence technologies for the detection of colo-rectal lesions: The future is now

Reviewer's code: 03252388

Position: Editorial Board

Academic degree: FACG, MD

Professional title: Assistant Professor, Staff Physician

Reviewer's Country/Territory: United States

Author's Country/Territory: Italy

Manuscript submission date: 2020-06-02

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-06-03 14:31

Reviewer performed review: 2020-06-04 12:36

Review time: 22 Hours

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



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SPECIFIC COMMENTS TO AUTHORS

The authors deliver a very well written and comprehensive manuscript about artificial intelligence for the detection of colorectal lesions. The article methodically goes through this technology and its progress in field of colorectal polyp detection. 1- in the section about artificial intelligence, it would be helpful to add a figure to demonstrate the different layers of the neural network. (input layer, hidden layers, output layers). 2- future needs section: It would be helpful to mention the current application of these different AI systems commercially throughout the world (for e.g. Medtronic system is rolled out in Europe for commercial use, FDA has not approved any AI system in US yet, etc..)



PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 57242

Title: Artificial intelligence technologies for the detection of colo-rectal lesions: The future is now

Reviewer’s code: 02445726

Position: Peer Reviewer

Academic degree: FEBG, PhD

Professional title: Doctor

Reviewer’s Country/Territory: United Kingdom

Author’s Country/Territory: Italy

Manuscript submission date: 2020-06-02

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-06-03 15:03

Reviewer performed review: 2020-06-08 13:14

Review time: 4 Days and 22 Hours

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



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SPECIFIC COMMENTS TO AUTHORS

Dear Sirs, Thank you for your invitation to review the this article. I think the authors correctly concluded that “the detection ability of AI systems is dependent on the inspection of the mucosa exposed by the endoscopist during the scope withdrawal, and an adequate technique is essential for its effective operating.” However I cannot accept their approach to another task for AI - the improving in detection of hyperplastic polyps with low malignant potential It looks like a dream (point no. 2 in conclusion) that macroscopically we are able to recognize polyps with a malignant potency when even experienced pathologists differ in accuracy assessment of hyperplastic/ serrated polyps and even adenomas - not to mention dysplasia in small polyps. I would not like to argue with such opposite opinions but I think, the authors should balance their statement with other studies which have confirmed that we should not relay on “optical pathology” but rather histopathological diagnoses. I think that realistic assessment of tasks for AI, enables its real development. Therefore, the authors should not avoid limitations and clearly they define. I think the authors reached their goals and they provided an overview on the progress of AI. However, in the first sentence where they started paragraph ARTIFICIAL INTELLIGENCE (AI) they have written: “Artificial intelligence (AI) is the evolution of general software systems that provide an input and obtain an output through an algorithm.” I would rather write that AI is a result of this evolution (because this is a process). The authors mentioned endoscopists’ and other limitations which provoke interest in AI (written) in the first part of the article: cecal intubation rate (>95% in screening colonoscopies), withdrawal time > 6 minutes, bowel preparation. These parameters are also important for AI which is based on skills and quality of endoscopist’s work. Therefore, I would mention that aspirational withdrawal time in some countries is recommended as >9 minutes Although the same



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assumption regarding withdrawal time was made in the authors' publication in "Gastroenterology" but this measure is not well accepted in some countries. Therefore, it would be also very interested to know the results of their study for endoscopists whose withdrawal time was not shorter than 10 minutes (see British Society of Gastroenterology's guidelines - Rees CJ et al. UK Key Performance Indicators & Quality Assurance Standards for Colonoscopy. <http://dx.doi.org/10.1136/gutjnl-2016-312044>). Also I am interested to know more about effect of CADE on individual endoscopist and know endoscopist's feedback retrospectively why they missed some polyps. Regarding future development it would be very welcome to employ AI for monitoring endoscopist if he assess sufficiently each colonic segment and then AI allows endoscopist to continue endoscopy with more distal segments.



PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 57242

Title: Artificial intelligence technologies for the detection of colo-rectal lesions: The future is now

Reviewer's code: 00074490

Position: Peer Reviewer

Academic degree: PhD

Professional title: Chief Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Italy

Manuscript submission date: 2020-06-02

Reviewer chosen by: AI Technique

Reviewer accepted review: 2020-06-02 23:35

Reviewer performed review: 2020-06-09 02:55

Review time: 6 Days and 3 Hours

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



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SPECIFIC COMMENTS TO AUTHORS

The use of artificial intelligence (AI) in colonoscopy has gained extensive attention in current times. In the present review, the authors reported the preliminary ex-vivo experiences and summarized the promising results of the first randomized controlled trials. The content of the review is comprehensive, and the language of the manuscript needs minor polishing. I suggest this manuscript be minor revised.