Baishideng Publishing Group

7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
https://www.wjgnet.com

PEER-REVIEW REPORT

Name of journal: *Artificial Intelligence in Medical Imaging*

Manuscript NO: 73882

Title: Application of Machine Learning in Oral and Maxillofacial Surgery

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05418785
Position: Peer Reviewer
Academic degree: PhD

Professional title: Assistant Professor

Reviewer's Country/Territory: Poland

Author's Country/Territory: China

Manuscript submission date: 2021-12-07

Reviewer chosen by: Jin-Lei Wang

Reviewer accepted review: 2021-12-11 15:33

Reviewer performed review: 2021-12-12 00:27

Review time: 8 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Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish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 [ ] 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	Peer-Review: [Y] Anonymous [ ] Onymous

Baishideng Publishing Group

7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
https://www.wjgnet.com

statements	Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

The content of the article is reflected in its title. Abstract has to be improved. There is unusual term used "data learning". As well, "prognostic prediction" (can prediction be un-prognostic?), "automatically learning feature information" are strange. There is a statement where the "automation" in building models found in machine learning is contradicted to direct programming. It is a too intence simplification. This ML "automation" can be achieved by coding the software. There is also unsuported statement (that is also not proved in the remaining part of the article): "Current evidence demonstrates that machine learning models can yield better performance than human clinicians." Key words are adequately applied. There are two Sections "Introduction" and "Machine learning" that serve as an introduction. They refere to the articles about medical application of ML. Probably that has caused several problems with these sections. Referring the definitions of AI, ML, discussing the issues of input data to the IT literature would be much more precise. AI arisen from ML. ML is not a branch of AI. Increasing the data size for a specific database sounds strange and it s doubful. Even a "minireview" - if it deals with ML - should be introduced with any simple classification of the tools. Especially the tools used by the authors of the referenced articles should be somehow classified and described more. There is also unsupported sattement: "Currently, better-performed algorithms typically belong to supervised learning". Validating or testing is not repeatedly adjusting the statistical model as stated at the end of ML section. MRI is not explained. The aricle - the minireview - for its nature does not bring any new knowledge or results. In section "Maxillofacial malignant tumors" AUC, NPC, PET/CT are used and not explained. There is unsuported statement at the end of this section "ML techniques have been shown to outperform the traditional

7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
https://www.wjgnet.com

statistical methods in early screening and prognosis evaluation of maxillofacial malignant tumors." Very good results of ML application are presented but not compared to other methods. I don't know who are "normal people" mentioned in section "Maxillofacial bone defects reconstruction". In section "Orthognathic surgery" the following three sentences are close together, but their meaning is not understandable to me: ". However, extensive manual input is still required. Hence, the applications of ML in orthognathic surgery is promising. Shin et al.[50] extracted the features from posteroanterior and lateral cephalogram and evaluated the necessity for orthognathic surgery using DL networks." The use of the phrase "existing algorithms may be unsatisfied" (used in Problems and Solutions section) can be a true one but it needs a proof (an argument, or example, or reference). The phrase "has been shown little effect on the real clinical decision-making" is not understandable. Why it is stated that the privacy issue is important specifically in ML? Is it not important in statistical approaches?

The conclusion section (2 sencences in 5 lines) is definitely too short. What is the aim of the article, if the authors can conclude it in two sentences. It seems that the article suffer from lack of co-authoring of IT specialist experienced in ML. Some misunderstandings of these advanced methods (ML, DL, issues of data) can be found in the article. It certainly needs to be supplemented. Also the proof reading is necessary. Even Word has found mistakes as "ethetics", "recontruction", "apperance", "contructed"...

The scope and number of articles illustrating the application of ML in the medicine areas on subject is high.