Rizky Merdietio Boedi

Dear, Dr. Mr. Rizky Merdietio Boedi:

Thank you for submitting the manuscript, "Machine Learning Assisted 5-Part Tooth Segmentation Method for CBCT-Based Dental Age Estimation in Adults" to The Journal of Forensic Odonto-Stomatology - JFOS. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

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Username: rizkymerdietio

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If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

Prof. Vilma Pinchi
Editor of JFOS
Prof. Vilma Pinchi Editor, JFOS The Journal of Forensic Odonto-Stomatology
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From:	Vilma Pinchi via Open Journal Systems <noreply@ojs.iofos.eu>
Sent:	05 February 2024 15:01
To:	Rizky Merdietio Boedi; Simon Shepherd; Fahmi Oscandar; Ademir Franco; Scheila Mânica
Subject:	[JFOS] Editor Decision
Attachments:	C-submit 2.docx; C-Figure 1.png; C-Figure 2.png

Dear Dr. Rizky Merdietio Boedi, Simon Shepherd, Fahmi Oscandar, Ademir Franco, Scheila Mânica:

the reviewers have commented on your submission to The Journal of Forensic Odonto-Stomatology - JFOS, "Machine Learning Assisted 5-Part Tooth Segmentation Method for CBCT-Based Dental Age Estimation in Adults".

You can find below the Reviewers' comments. If you are ready to review of your manuscript please send the revised version of your paper within 5 March 2024. If this deadline has too early set given the extensive modifications required, don't hesitate to contact me if you need more time.

When all the needed material is ready please log in JFOS Journal Manager as Author, retrieve the original submission and upload:

1 - a TRACKED VERSION of your reviewed manuscript that shows the modifications done compared to the original submission. This file should not include any references of Authors, being the file that will be used for any possible further round of blind revision process.

2 - an UNTRACKED VERSION of the reviewed article completed by the title page, the authors' references, reviewed abstract, keywords, pictures and tables, references and any other material to be included in the final article should it been accepted for publication at this stage.

3- pictures or images must be uploaded also as a separate high resolution files (> 300 dpi)

4- references must follow the Vancouver style (e.g. Ribeiro G, Tangen JM, McKimmie BM. Beliefs about error rates and human judgment in forensic science. Forensic Sci Int. 2019;297:138-47. doi: 10.1016/j.forsciint.2019.01.034.; read carefully Authors' guidelines - references section- for complete information)

5 -detailed answers to reviewers' comments

6 - the declaration of no conflict of interests and that the research is original and has never been published.

Please consider that a carefully revision of article by an English proof reading service is highly appreciated and generally facilitates further steps of review process. If the manuscript underwent to an English review by a professional service or by mother language authors or collaborators, please add a certificate or declaration to the uploaded material.

Best regards

Reviewer's comments

Generally scientific paper is of good quality and appropriate scientific value, design of study is of high value, while technical description of research characterized with excellent representation. However, I would suggest small corrections which should be made by authors before accepting this manuscript for publication:

- First two sentences within Introduction section should be supported by references

- In Materials and Methods sections authors are mentioning that "The mean voxel size was 0.2 mm^3", but it should be clarified for how many cases from the sample such voxel size was used, and how many cases were characterized with other voxel sizes, since such can impact segmentation efficiency. Formulation of "**mean** voxel size" is not appropriate for this design of study.

- The same goes with following statement "The field of view varied between 250 x 250 x 250 to 400 x 400 x 400", it should be clarified how many cases were provided with which specific field of view, because again such parameter could influence segmentation algorithm performance.

- In Results section authors should provide more description about data presented in Table 4; authors should present obtained dental age deviations compare to the chronological age in logical form within results section, since primary objective of research was to asses segmentation method performance for age estimation, while there is a deficiency of data regarding the age itself within Results section.

- Also Discussion section may be enriched not only with information about algorithmic performance of different models, but also with information about how this performance impact age deviations pattern, based on the comparison of dental and chronological age data.

- Limitations of the study should be clarified in the end of Discussion section.

Editorial staff and Editor's omments

Authors should consider more carefully the previous literature on dental tooth segmentation and discuss the present resulst accordingly, otherwise the main conclusion appears scientifically weak. The main conclusion of the article is : " The 〖SG〗_t^5 approach combined with SVR-Poly model gives an overall better performance when compared to other similar methods of tooth volumetric analysis or segmentation approach". This conclusion must be stated only after a thourough comparison with previous segmentation approaches experimented on dental pulp volume. Some relevant previous and recent studies were missed. Moreover the discussion does not offer any comparison with previous studies/segmentation techniques apart a comparison of $R2$ with only few previous researches that indeed considerd different teeth, larger samples and validated the technique. In fact some previous studies dealt with the reliability of pulp volume measurements done on CBCT (with segmentation/geometric approximation or not) and compared it with physical measures of dental pulp volume (Star H, Thevissen P, Jacobs R, Fieuws S, Solheim T, Willems G. Human dental age estimation by calculation of pulp-tooth volume ratios yielded on clinically acquired cone beam computed tomography images of monoradicular teeth. J Forensic Sci. 2011 Jan;56 Suppl 1:S77-82.; your reference # 15, e.g.). How do you overcome this crucial point?

The limitation due to the limited sample should be disclosed and reported. The distribution of the sample per sex and cohort of age and $R2$ distributed accordingly would beneficial to this.

Moreover the models were not validated on test sample, hence it can be argued that they works well (or better compared to others) on the learning samples, but their real permormances are not yet investigated. How did Authors face this issue?

Prof. Vilma Pinchi Editor, JFOS The Journal of Forensic Odonto-Stomatology
http://www.iofos.eu/ojs/index.php/Journal

Rizky Merdietio Boedi

Dear Rizky Merdietio Boedi, Simon Shepherd, Fahmi Oscandar, Ademir Franco, Scheila Mânica:

We have reached a decision regarding your submission to The Journal of Forensic Odonto-Stomatology - JFOS, "Machine Learning Assisted 5-Part Tooth Segmentation Method for CBCT-Based Dental Age Estimation in Adults".

Our decision is to accept your submission for publication.

You will be furtherly contacted to review the galley proof of your article.

Prof. Vilma Pinchi Editor, JFOS The Journal of Forensic Odonto-Stomatology
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