Brazilian Dental Science

Subject: [BDS] Editor Decision

Pradeep Kumar Yadalam, Carlos M Ardila:

We have reached a decision regarding your submission to Brazilian Dental Science, "Title Multiview Clustering With Graph Autoencoder for Generating Histopathological Images in Oral Cancer".

Our decision is: Resubmit

Reviewer A:
Recommendation: Resubmit for Review

Questionnaire

Does the manuscript contain new and significant information to justify publication?*

Yes

Does the Abstract (Summary) clearly and accurately describe the content of the article?

Yes

Brazilian Dental Science

Is the problem significant and concisely stated?

Yes

Are the methods or research design described comprehensively? Is the statistical analysis adequate?

No

Are the interpretations and conclusions justified by the results?

No

Is adequate reference made to other work in the field?

Yes

Is the language acceptable?

Yes

Manuscript Structure

Length of article is:*

Adequate

Number of tables is:

Brazilian Dental Science

Adequate

Number of figures is:

Adequate

Please state any conflict(s) of interest that you have in relation to the review of this paper (state “none” if this is not applicable).

None

Rating

Interest*

Excellent

Quality

Good

Originality

Excellent

Overall

Good

Recommendation

Brazilian Dental Science

Major Revision

Would you be willing to review a revision of this manuscript?

Yes

Comments

Comments to the Author

This work presents an innovative method to analyze histopathological images for improving diagnostics for oral squamous cell carcinoma, which is a major health issue especially in specific regions such as Southeast Asia. The authors have applied computational methods that seem to achieve a good performance and reach the proposed objectives.

However, I have a few observations regarding the text and the work overall:
1 - There are minor modifications to the text to make it comply to the journal's author guidelines. Please add headings to the Abstract (Objective, Material and Methods, Results, and Conclusions). Also check the references. References 14 and 15, for example, were not cited in the text.
2 - Figure 1 has a typo in the "MCGAE Implementation" step, please fix it.
3 - The Materials and Methods section explains each step of the analysis, however there are missing details that may compromise reproducibility. Please review this section and add which software libraries and parameters were used for every step. For example, Section 5.2 Clustering Loss describes what the technique does as if introducing the concept, including examples, but does not specify which of these approaches was used.
4 - Please review the organization of the Results section. Sometimes it

would be better for the reader for figures to be closer to the results that are being described in the text. Also avoid subjective interpretation of results in this section.
5 - Please be aware that in the Discussion section, figures should not be referenced.
6 - I was not sure if the focus of the work was in showing the method's performance in rebuilding the histopathological images or in identifying biological features to aid in diagnostics. If it is the former, it should be more clearly defined in the text. If it is the latter, I would suggest using an example with the analyzed data that could illustrate this use. In any case, if possible this would greatly enrich the work.

Reviewer C:
Recommendation: Revisions Required

Questionnaire

Does the manuscript contain new and significant information to justify publication?*

Yes

Does the Abstract (Summary) clearly and accurately describe the content of the article?

Yes

Is the problem significant and concisely stated?

Brazilian Dental Science

Yes

Are the methods or research design described comprehensively? Is the statistical analysis adequate?

No

Are the interpretations and conclusions justified by the results?

No

Is adequate reference made to other work in the field?

No

Is the language acceptable?

No

Manuscript Structure

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Adequate

Brazilian Dental Science

Number of figures is:

Adequate

Please state any conflict(s) of interest that you have in relation to the review of this paper (state "none" if this is not applicable).

None.

Rating

Interest*

Good

Quality

Average

Originality

Good

Overall

Good

Recommendation

Minor Revision

Would you be willing to review a revision of this manuscript?

Brazilian Dental Science

Yes

Comments

Comments to the Author

The explanation of the research in the introduction is quite weak and does not adequately explain the characteristics and reasons for acquiring them. More brief and simple contents are in the introduction and discussion sections. There are numerous spelling errors in the manuscript and reference section. These must be corrected.

Reviewer E:
Recommendation: Resubmit for Review

Questionnaire

Does the manuscript contain new and significant information to justify publication?*

Yes

Does the Abstract (Summary) clearly and accurately describe the content of the article?

Brazilian Dental Science

Yes

Is the problem significant and concisely stated?

Yes

Are the methods or research design described comprehensively? Is the statistical analysis adequate?

No

Are the interpretations and conclusions justified by the results?

No

Is adequate reference made to other work in the field?

Yes

Is the language acceptable?

Yes

Manuscript Structure

Length of article is:*

Adequate

Brazilian Dental Science

Number of tables is:

Adequate

Number of figures is:

Adequate

Please state any conflict(s) of interest that you have in relation to the review of this paper (state "none" if this is not applicable).

None.

Rating

Interest*

Good

Quality

Average

Originality

Average

Overall

Good

Recommendation

Brazilian Dental Science

Major Revision

Would you be willing to review a revision of this manuscript?

Yes

Comments

Comments to the Author

The paper addresses a relevant and timely topic in the application of machine learning to oral cancer diagnostics. The integration of Multiview clustering with graph autoencoders (MCGAE) for the analysis of histopathological images is an innovative direction with promising clinical and computational implications.
The paper is generally well organized and presents some positive aspects, including the use of a publicly available dataset (TCGA-HNSC) and the application of explainability tools such as SHAP and attention mechanisms. The structure is clear, the described figures appear to support the analysis, and the use of clustering evaluation metrics such as Silhouette Score, Calinski-Harabasz Index, and Adjusted Rand Index is appropriate for the proposed methodology.
However, the manuscript, in its current form, has some critical issues that must be addressed before it can be considered for publication. These issues pertain to methodological transparency, interpretability of the results, reproducibility, and scientific accuracy in the claims made.

Major Issues
1. Overstated performance claims
- The manuscript reports perfect or near-perfect clustering performance (e.g., ARI = 1.0, equal cluster sizes, uniform attention weights). While strong results are welcome, such perfection is rare in

real-world biomedical data and raises concerns about overfitting, data leakage, or a lack of realistic variability.
- These claims must be tempered, critically discussed, and supported with baseline comparisons and error analysis.

2. Lack of baseline models
- There is no comparison to conventional clustering or dimensionality reduction methods (e.g., K-means on PCA, standard autoencoders). Without such baselines, it is difficult to assess the added value of the proposed MCGAE framework.
- I strongly recommend including at least one baseline comparison.

3. Ambiguity regarding "Image Generation"
- The manuscript repeatedly refers to “generating histopathological images,” which implies synthetic image creation. However, I found no evidence that actual images are being generated in a visual form. It appears the authors are referring to learned embeddings or reconstructions at the feature level.
- Please revise the terminology to avoid confusion unless image synthesis is explicitly demonstrated.

4. Insufficient methodological details
- Key aspects are underexplained:
>> What exactly are the different “views” used in the multiview setup?
>> How was the graph constructed? What is the adjacency criterion?
>> How were the loss weights determined?
>> Are the ground-truth labels used in computing ARI/NMI, and under what assumptions?
>> These details are essential for understanding and reproducing the results.

5. No statistical variability reported
- The reported metrics (accuracy, F1, silhouette, R^2, etc.) are given as single values without confidence intervals, standard deviations, or discussion of variability across runs or folds.
- Reporting mean ± SD across multiple trials would strengthen the robustness of the findings.

General recommendations

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• Clarify the contribution of this study in relation to previous works using GAEs or multiview clustering.
• Include baseline models and perform comparative analysis.
• Reframe performance claims with statistical support.
• Improve clarity in terminology, especially regarding the term "generation."
• The conclusion overstates the clinical readiness of the method. It would be more appropriate to frame the contribution as a promising research direction that requires further validation.

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With revisions addressing the above concerns, this manuscript could offer a valuable contribution to the field. I encourage the authors to revise thoroughly with an emphasis on clarity, methodological rigor, and realistic positioning of their results.
