

REVIEWER'S REPORT

Manuscript No.: IJAR-52220

Date: 13-06-2025

Title: TRANSFORMER NETWORK FOR BRAIN GLIOMA SEGMENTATION IN MRI IMAGES

Recommendation:

Accept as it is.....**YES**.....
 Accept after minor revision.....
 Accept after major revision
 Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality			√	
Techn. Quality		√		
Clarity		√		
Significance			√	

Reviewer's Name: Dr Aamina

Reviewer's Decision about Paper: **Recommended for Publication.**

Comments (*Use additional pages, if required*)

Reviewer's Comment / Report

Abstract Review

The abstract provides a clear and concise overview of the research conducted. It introduces the medical context of gliomas effectively and highlights the motivation behind automating segmentation tasks. The objective, dataset used (BraTS 2021), methodology (Transformer Network with EfficientNet-B1 backbone), and performance metrics (Dice coefficient) are well-defined. The comparison with a U-Net baseline establishes the novelty and impact of the study. The conclusion underscores the potential clinical implications and outlines future directions.

Strengths:

- Clear articulation of research motivation and relevance
- Specificity in dataset details and experimental parameters
- Quantitative comparison with a baseline model
- Logical conclusion drawn from results

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Introduction Review

The introduction sets the stage with a thorough explanation of gliomas, including classification, prevalence, and clinical severity. It transitions well into discussing the role of MRI in glioma diagnosis and the limitations of manual segmentation, thus establishing a strong rationale for the proposed automated solution. Relevant citations support key claims, and the structure follows a coherent and logical progression from clinical background to technological application.

Strengths:

- Comprehensive overview of the clinical and diagnostic aspects of gliomas
 - Effective explanation of MRI's diagnostic utility
 - Well-supported by literature with appropriate citations
 - Smooth flow from problem identification to proposed solution
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Overall Assessment

The manuscript demonstrates a strong interdisciplinary approach combining deep learning with clinical neurology. It maintains scientific rigor and clarity, making it accessible to readers from both technical and medical backgrounds. The choice of dataset, model, and evaluation metrics aligns well with the research goals.

General Comments:

- The manuscript is technically sound and clinically relevant.
 - Terminology is appropriate for a professional audience.
 - The comparative results are compelling and well-presented.
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Recommendation:

The manuscript reflects a valuable contribution to the field of medical image segmentation and neuroimaging research.