REVIEWER'S REPORT

Manuscript No.: **IJAR- 54035**   **Date**: 26-09-2025

Title: Pancreatic Cancer Detection using Radiomics: A Comparative Study between CNN Architecture and Vision Transformer

Recommendation:

Accept as it is ………………………………

Accept after minor revision ...✓………

Accept after major revision…………

Do not accept (*Reasons below*) ………

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

Reviewer Name: **Sudhanshu Sekhar Tripathy**   **Date:** 26-09-2025

Reviewer's Comment for Publication.

(*To be published with the manuscript in the journal*)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewer's name.

Reviewer's Comment for Publication

The manuscript presents a comparative study between **Convolutional Neural Networks (CNNs)** and **Vision Transformers (ViTs)** for the detection of pancreatic cancer using radiomics from CT scan images. The work is highly relevant as pancreatic cancer is difficult to detect early, and the integration of AI-based imaging tools can enhance diagnostic accuracy. The experimental results are promising, showing that ViTs outperform CNNs in classification tasks. The paper is of good quality, but requires **minor revisions** before acceptance.

Detailed Reviewer's Report

1. Scope & Relevance:

- The study is highly relevant to the intersection of **medical imaging, AI, and oncology**.

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- Contributes to improving **early detection of pancreatic cancer** through automated radiomics analysis.

2. Structure & Technical Presentation:

- The paper follows a clear structure with Abstract, Introduction, Literature Review, Methods, Results, and Discussion.
- Flowcharts, CNN and ViT explanations, and dataset description are provided.
- Suggested improvement: Include a **summary comparative table** of CNN vs. ViT results for better clarity.

3. Experimental / Methodological Details:

- Dataset of **14,000 CT scan images** (Kaggle + NCI Cancer Imaging Program).
- Training/testing split (10,000 train, 4,000 test) with image preprocessing (128x128).
- Models trained for 10 epochs, batch size 32.
- Metrics reported: **accuracy, precision, recall, AUC, confusion matrix**.
- Suggested improvements:
  - Include **hyper-parameters** (learning rate, optimizer, loss function).
  - Provide **statistical significance testing** (e.g., t-test, p-values).
  - Discuss **class imbalance handling** (oversampling, augmentation, weighting).

4. References & Citations:

- The absence of references weakens the scientific validity of the paper. Please add an appropriate and updated reference list and ensure in-text citations are integrated throughout the manuscript. This will improve the credibility, scholarly depth, and acceptability of the article.

- Suggested to add **very recent studies (2023–2025)** on ViTs in radiomics and medical imaging.

5. Language & Style:

- Overall clear and academic, but minor grammatical errors exist.

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- Some sentences are lengthy and need simplification.
- Terms like "my model" should be replaced with neutral scientific writing ("the model").

6. Key Strengths:

- Comparative analysis of **two state-of-the-art architectures**.
- Large dataset (14,000 images).
- Multi-metric evaluation for robust validation.
- Practical insights on CNNs vs. ViTs in terms of accuracy and computational cost.

7. Areas for Improvement:

- Add a **comparative results table** (CNN vs. ViT: accuracy, precision, recall, AUC).
- Include details of **training hyper-parameters and optimizer choices**.
- Standardize reference formatting.
- Improve grammar and consistency of writing.
- Mention possible **future work** (e.g., hybrid CNN-ViT models, explainability in medical AI).

Final Feedback to Author

This is a **valuable and well-executed study**. With minor improvements in **experimental details, references, and presentation**, the manuscript will be ready for publication.