

REVIEWER'S REPORT

Manuscript No.: IJAR-55025

Title: Detection of Microcalcifications in Mammograms Using Continuous Wavelet Transform and Multiscale Product

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: Dr S. K. Nath

Date: 01.12.25

Detailed Reviewer's Report

Strengths of the Paper

- **Innovative Approach:** The combination of Continuous Wavelet Transform with multiscale product analysis presents a robust methodology for enhancing microcalcifications in mammograms.
- **Effective Preprocessing:** The proposed preprocessing pipeline effectively reduces fatty tissues and artifacts, improving the visibility of regions of interest.
- **Comprehensive Evaluation:** The method is tested on multiple datasets, including MIAS and N'Djamena images, demonstrating versatility across different sources.
- **Clear Visual Results:** The figures clearly illustrate the enhancement effects of the proposed technique, supporting the qualitative assessment.
- **Potential for Clinical Application:** The approach shows promise in aiding early detection of breast cancer through computer-aided diagnostics.

Weaknesses of the Paper

- **Limited Quantitative Analysis:** The study relies heavily on visual and qualitative assessments; quantitative metrics such as sensitivity, specificity, or ROC curves are absent.
- **Absence of Comparative Benchmarking:** The paper does not include a detailed comparison with existing state-of-the-art methods or baseline algorithms.
- **Insufficient Details on Dataset Characteristics:** Details like the size, nature, and annotation protocols for the datasets used are not thoroughly described.
- **Lack of Algorithmic Parameter Specification:** Specific parameters related to the wavelet transform, thresholding, and other processing steps are not explicitly provided.
- **No Mention of Ethical Clearance or Data Privacy:** The paper does not state whether any ethical approvals were obtained or needed for using patient images.

Reviewer Comments

- **Ethical Clearance Status:** The manuscript does not mention whether ethical approval or patient consent was required or obtained, which is important for studies involving medical images.
- **Issues in Methodology:** While the methodology appears sound, the absence of detailed parameter choices and dataset descriptions limits reproducibility and critical assessment.

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- **Typographical Mistakes:** Minor typographical issues are present but do not significantly hinder understanding.
- **Grammar and English Quality:** The language is generally clear; however, occasional grammatical improvements could enhance readability.
- **Formatting Issues:** Figures and captions are well-integrated, but there are inconsistencies in referencing some figures and the overall formatting could benefit from standardization.
- **Clarity of Objectives, Results, and Conclusions:** The aims, outcome, and conclusions are generally well-presented; however, an explicit statement of quantitative results would strengthen clarity.
- **Adequacy of References:** The references cover relevant prior work, but more recent studies could be included to position this contribution in the current research landscape.
- **Missing or Incomplete Information:** Details like dataset specifics, parameter settings, and evaluation metrics are necessary to fully assess the method's effectiveness.