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REVIEWER'S REPORT

Manuscript No.: IJAR-59818

Title: Intelligent System for Detecting Plagiarism by Obfuscation in Academic Works (ISDP).

Recommendation:

Accept as it is .....

Accept after minor revision.....

Accept after major revision .....yes.....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality			Y	
Techn. Quality			Y	
Clarity			Y	
Significance			y	

Reviewer's Name: Dr.Shaweta sachdeva

Detailed Reviewer's Report

1. The manuscript addresses an important research problem related to plagiarism detection using Sentence-BERT and Winnowing. However, the novelty of the proposed hybrid approach is not sufficiently established. The authors should clearly distinguish their contributions from existing semantic plagiarism detection techniques.
2. The abstract requires improvement in terms of clarity, structure, and presentation of the major findings. The authors should explicitly highlight the research objectives, proposed methodology, experimental results, and significant contributions.
3. The literature review is limited and lacks a comprehensive critical comparison of existing plagiarism detection approaches. The authors should incorporate additional relevant studies and clearly identify the research gaps addressed by the proposed system.
4. The proposed methodology requires further technical explanation, particularly regarding the integration of the Winnowing algorithm with the fine-tuned Sentence-BERT model. The interaction between lexical fingerprinting and semantic similarity detection should be explained more systematically.
5. The authors have mentioned contrastive fine-tuning using 7,370 training pairs. However, important implementation details, including learning rate, batch size, number of epochs, optimizer, and negative sampling strategy, are missing. These parameters should be provided to ensure reproducibility.
6. The selection of the semantic similarity threshold of 0.75 is not adequately justified. The authors should conduct threshold sensitivity analysis to demonstrate its influence on precision, recall, and overall plagiarism detection performance.
7. The experimental evaluation is based on the PAN dataset, but the manuscript does not provide sufficient information regarding data preprocessing, dataset distribution, and training-validation-test partitioning. These details should be clearly presented.
8. The manuscript claims a controlled ablation study involving fine-tuning, similarity threshold, and segment fusion. However, separate quantitative results for these components are not adequately presented. A detailed ablation study is necessary to validate their individual contributions.

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9. The performance improvement reported for the fine-tuned model is promising; however, the recall improvement for artificial plagiarism cases is relatively modest, increasing from 0.339 to 0.383. The authors should critically discuss whether this improvement is practically significant.
10. The experimental results should be compared with additional baseline models and recent state-of-the-art plagiarism detection techniques. Comparing only the base SBERT model with its fine-tuned version limits the strength of the experimental validation.
11. The manuscript does not adequately investigate false-positive and false-negative detection cases. A detailed error analysis would help explain the limitations of the proposed approach, particularly for heavily paraphrased and semantically modified text.
12. The proposed architecture lacks computational complexity analysis. The authors should report execution time, memory requirements, and scalability to demonstrate the feasibility of applying the system to large academic document repositories.
13. The mathematical formulations and notations require careful revision. Several equations contain formatting inconsistencies, unclear symbols, and insufficient explanations, which affect the technical readability of the manuscript.
14. The results section contains inconsistencies in terminology, particularly in the discussion of accuracy and precision. The authors should clearly distinguish these evaluation metrics and ensure that the conclusions accurately reflect the reported numerical results.
15. Figures 2 and 3 require improvement in terms of readability, labeling, and graphical presentation. The authors should also provide detailed explanations of the observed performance differences.
16. The manuscript should discuss an important limitation of the hybrid architecture: restricting semantic comparison to candidate regions identified by Winnowing may cause strongly paraphrased passages with little lexical overlap to remain undetected.
17. The authors should include statistical significance testing or confidence intervals to establish the reliability of the reported performance improvements.
18. The discussion section should be expanded to explain the practical applicability of the proposed system in academic institutions, including its limitations when handling multilingual plagiarism, translated content, and AI-generated paraphrasing.
19. The manuscript contains several grammatical errors, typographical mistakes, inconsistent technical terminology, and formatting issues. Thorough language editing and proofreading are required to improve readability and academic presentation.
20. The reference section requires revision to ensure consistency with the journal's prescribed citation style. The authors should also verify the relevance and accuracy of the references supporting the methodology and evaluation metrics.
Overall recommendation: Major Revision.
The manuscript addresses a relevant research problem and reports improvements through domain-adapted Sentence-BERT. However, insufficient methodological details, limited baseline comparisons, incomplete ablation results, and inconsistencies in the presentation of evaluation metrics reduce the strength of the findings. Substantial revisions are required before the manuscript can be considered for publication.