REVIEWER'S REPORT

Manuscript No: IJAR- 52846

Date: 18-07-2025

Title：Sentiment Classification Using Hybrid Text Blob Bi-LSTM Deep Learning Model

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 Amina

Detailed Review Report

Abstract and Introduction Review:

The abstract effectively outlines the purpose and contribution of the study, emphasizing the integration of TextBlob and Bi-LSTM into a novel hybrid model for sentiment analysis. The motivation behind using both lexicon-based and deep learning methods is clearly articulated, highlighting the interpretability of TextBlob and the contextual depth offered by Bi-LSTM. The claim of improved accuracy is specific (89.3%) and grounded in a comparative context.

The introduction provides a comprehensive overview of sentiment analysis within the scope of NLP. It establishes the significance of sentiment analysis, particularly in analyzing social media content like tweets. The references to real-world applications in business and media underscore the relevance of the research. The section elaborates on the practical challenges faced in sentiment analysis, especially when applied to unstructured data from platforms like Twitter. The objective is clearly stated, and the rationale behind proposing a hybrid approach is logical and well supported.

Technical Content Review:

The methodology combines two distinct approaches—TextBlob, a rule-based sentiment scoring mechanism, and Bi-LSTM, a deep learning model capable of learning contextual dependencies in both forward and backward sequences. The hybridization strategy is clearly explained and justified, leveraging the advantages of both components.

The explanation of the limitations of each technique (TextBlob's adaptability and Bi-LSTM's parallelism challenges) adds credibility to the argument for a combined approach. The performance benchmark mentioned (accuracy of 89.3%) is presented with comparative context, stating a 2–5% improvement over LSTM on common datasets, which indicates empirical evaluation.

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Language and Presentation:

The writing is clear and technical, appropriate for an academic or research audience. Definitions are provided where necessary, such as for Bi-LSTM and sentiment polarity, and domain-specific terminology is used accurately. The flow of information is logical, progressing from a general overview to specific challenges and culminating in the proposed solution.

Conclusion (implicit):

Though not explicitly presented in the provided text, the proposed model's impact and significance are implied through the reported accuracy and the discussion of hybridization benefits.

Overall Evaluation:

The work presents a meaningful contribution to the field of sentiment analysis by proposing a hybrid model that leverages both lexicon-based and deep learning techniques. The text maintains coherence, technical clarity, and relevance throughout. The focus on tweet sentiment analysis ensures the research is timely and aligned with current trends in NLP and data-driven social media analytics.