



REVIEWER’S REPORT

Manuscript No.: IJAR-56175

Title: Understanding and Uses Made of Artificial Intelligence by Entrepreneurs in Côte d’Ivoire

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 Gulnawaz

Detailed Reviewer’s Report

The manuscript entitled “Exploring and Comparing the Application of AI Transformer Techniques and Long-Short Term Memory in Network Intrusion Detection Systems” presents a timely and technically relevant comparative study of LSTM, Transformer, and Hybrid architectures for Network Intrusion Detection Systems (NIDS). The topic is highly significant given the increasing sophistication of cyber threats and the need for intelligent, adaptive intrusion detection mechanisms.

Overall, the manuscript is well structured. The introduction clearly explains the motivation for comparing LSTM and Transformer models, and the problem statement is logically framed around the limitations of traditional NIDS and shallow machine learning approaches. The objectives are clearly articulated and aligned with the methodology. The literature review is comprehensive and includes recent studies, particularly hybrid approaches, which strengthens the theoretical foundation of the research.

One of the major strengths of the paper is the structured comparative evaluation. The methodology is logically organized, detailing dataset selection, preprocessing, model implementation, and evaluation metrics. The inclusion of multiple datasets (NSL-KDD and UNSW-NB15) enhances credibility and allows for broader performance insights. The results are clearly presented in tabular form, and the discussion effectively interprets the findings. The observation that Transformer models outperform standalone LSTM models, and that Hybrid architectures achieve the best overall performance, is consistent with contemporary trends in deep learning for cybersecurity.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

The discussion section is particularly strong. It not only reports numerical differences but also explains *why* Transformers and Hybrid models perform better (self-attention, parallelization, global dependency modeling). The practical implications for real-time NIDS deployment are clearly outlined, which adds applied value to the study.

However, several areas require improvement:

First, the manuscript appears to present “actual experimental” results, yet there is limited detail regarding implementation specifics. Information such as hardware configuration, batch size, optimizer type, learning rate schedules, number of epochs, and statistical significance testing should be explicitly stated to ensure reproducibility. Without these details, it is difficult to fully assess experimental rigor.

Second, although performance metrics are comprehensive, there is no discussion of statistical validation (e.g., confidence intervals, repeated runs, or significance tests). Given that performance differences are sometimes within 1–2%, statistical verification would strengthen the conclusions.

Third, while the hybrid model shows superior performance, its architectural structure is not described in sufficient detail. A diagram or clearer explanation of how LSTM and Transformer components are integrated (sequential stacking vs parallel fusion) would improve clarity.

Fourth, minor language and formatting refinements are needed. There are small grammatical inconsistencies, spacing issues, and repetition in some sections (e.g., comparative evaluation descriptions appear twice in similar wording). Careful proofreading would enhance readability and academic tone.

Finally, although limitations are acknowledged, further discussion on adversarial robustness, encrypted traffic handling, and deployment cost analysis would add depth to the study's practical relevance.

In conclusion, this manuscript makes a meaningful contribution to AI-driven intrusion detection research. It provides a structured and practical comparison of LSTM, Transformer, and Hybrid models and offers clear guidance for next-generation NIDS design. With improvements in methodological transparency, architectural clarity, and minor language refinement, the paper would be suitable for publication.