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REVIEWER'S REPORT

Manuscript No.: IJAR-56488

Title: Deep Learning Models for Advanced Intrusion Detection in Next-Generation Networks.

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: Mr. Bilal Mir

Reviewer's Comment for Publication.

The manuscript presents a deep learning–based intrusion detection framework that combines Convolutional Neural Networks (CNN) and Long Short-Term Memory (LSTM) networks for detecting cyber attacks in next-generation network environments such as IoT, SDN, and 5G infrastructures. The study evaluates the proposed hybrid model using well-known benchmark datasets (NSL-KDD and UNSW-NB15) and compares its performance with traditional machine learning models including SVM, Random Forest, and KNN.

The topic is timely and relevant, considering the increasing complexity of cyber threats in modern network infrastructures. The hybrid CNN–LSTM architecture is an appropriate approach for capturing both spatial and temporal features of network traffic data. The experimental results demonstrate promising performance, with the proposed model achieving high accuracy, precision, recall, and F1-score. Overall, the study contributes to the development of intelligent intrusion detection systems using deep learning techniques.

However, several minor issues should be addressed before publication:

1. **Language and grammar:**
   The manuscript contains several minor grammatical errors and formatting inconsistencies (e.g., spacing issues, hyphenation, and inconsistent use of terms such as "next generation" and "next-generation"). Careful proofreading and language editing are recommended.
2. **Methodological clarity:**
   The paper should provide more details regarding the **CNN–LSTM architecture**, including the number of convolution layers, kernel sizes, number of LSTM units, dropout layers, and other architectural parameters to enhance reproducibility.
3. **Experimental details:**
   Additional information about **hardware configuration, training time, and implementation tools (e.g., TensorFlow, PyTorch, or Keras)** would improve the transparency of the experimental setup.

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4. **Dataset explanation:**
   Although the datasets used are mentioned, the authors could briefly describe the **distribution of attack categories and class imbalance handling techniques**, if any were applied.
5. **Figures and tables formatting:**
   Figures and tables should be properly labeled and formatted according to journal guidelines. Some captions and figure descriptions need clearer explanations.
6. **Discussion enhancement:**
   The results section could include a more detailed discussion comparing the proposed model with **recent deep learning IDS models** reported in the literature.

Overall, the manuscript addresses an important topic in cybersecurity and demonstrates promising results. After addressing the minor revisions mentioned above, the paper can be considered suitable for publication.