|  |  |
| --- | --- |
| Journal Name: | **Journal of Engineering Research and Reports** |
| Manuscript Number: | **Ms\_JERR\_136698** |
| Title of the Manuscript: | **A Multiscale Approach to Cyber-Mechanical Threat Modeling for Predicting and Preventing Failures in Critical Energy Infrastructure** |
| Type of the Article |  |

PART 1: Comments

|  |  |  |
| --- | --- | --- |
|  | **Reviewer’s comment****Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This manuscript introduces a novel multiscale AI/ML framework for cyber-mechanical threat modeling in critical energy infrastructure. As cyber-physical attacks increasingly disrupt energy systems, this research addresses a major gap by combining ConvLSTM3D anomaly detection with GNN-based threat propagation analysis. It offers significant contributions to predictive resilience modeling and real-time defense strategies. The framework’s adaptabilitymakes it relevant across both developed and emerging infrastructure networks globally. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | Yes, the title clearly reflects the core contribution and scope of the manuscript. |  |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.** | Yes, the abstract is comprehensive and well-structured. No additions or deletions are needed. |  |
| **Is the manuscript scientifically, correct? Please write here.** | Yes, the manuscript is methodologically rigorous, with sound implementation of machinelearning models, statistical validations, and simulations across multiple temporal and spatial scales. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | Yes, the references are sufficient, diverse, and include recent works up to 2025. No further references are required. |  |
| **Is the language/English quality of the article suitable for scholarly communications?** | Yes, the manuscript is well-written in clear, scholarly English and meets the standards for academic publication. |  |
| **Optional/General** comments | The manuscript presents timely research with practical applications in energy cybersecurity. Future extensions could explore federated learning and integration withadaptive defense protocols. |  |

PART 2:

|  |  |  |
| --- | --- | --- |
|  | **Reviewer’s comment** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in detail)*No ethical issues are present. Public datasets were used, and all data handling adhered to ethical research standards. |  |

**Reviewer Details:**

**Jasmin Bharadiya, University of The Cumberland, USA**