

Review Form 3

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| Journal Name: | Asian Journal of Research in Computer Science |
| Manuscript Number: | Ms_AJRCOS_124252 |
| Title of the Manuscript: | Leveraging AI and Machine Learning for the Protection of Critical National Infrastructure |
| Type of the Article | |

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

| Compulsory REVISION comments | Reviewer's comment | Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i> |
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| <p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p> | <p>Dear Author and Editor,</p> <p>Reviewer Comments:</p> <p>The paper presents an important and timely discussion on the role of artificial intelligence (AI) and machine learning (ML) in safeguarding critical national infrastructure (CNI) from various threats, particularly cyberattacks. The abstract provides a clear outline of the study's objectives, methods, and conclusions, but there are several areas that could benefit from further refinement and expansion. Below is an evaluation of the key sections of the paper along with suggestions for improvement:</p> <p>Areas for Improvement:</p> <ol style="list-style-type: none"> 1. Abstract: <ul style="list-style-type: none"> ○ The abstract could be more concise while still retaining the key points. There are redundancies in phrases such as "leverage AI and ML for protection" that are repeated multiple times. A more succinct summary would provide a clearer overview without losing detail. 2. Introduction: <ul style="list-style-type: none"> ○ The introduction sets the stage well but could benefit from a more explicit linkage between the growing complexity of cyber threats and the unique capabilities of AI/ML in addressing those threats. Currently, the introduction moves quickly from describing the importance of CNI to AI/ML without a clear transition. ○ Consider providing more contemporary examples of AI and ML deployment in CNI protection beyond fintech companies. Expanding examples to include other sectors such as healthcare, energy, or transportation would make the argument more compelling. 3. Thematic Analysis: <ul style="list-style-type: none"> ○ The qualitative method and thematic exposition mentioned in the abstract are not thoroughly discussed in the paper. The study would benefit from a dedicated section that explains the thematic analysis used to interpret the data. This would strengthen the methodological rigor and make the research more reproducible. 4. Use of Secondary Data: <ul style="list-style-type: none"> ○ While the paper relies on secondary data, it does not explicitly discuss how this data was sourced, evaluated, or analyzed. A brief section detailing the criteria for selecting secondary sources and the reliability of these data points would enhance the study's transparency. 5. Research Questions: <ul style="list-style-type: none"> ○ While the research questions are clearly stated, they could be expanded or rephrased to foster deeper exploration. For example, the second question, "To what extent can AI and ML help in the protection of CNI?" could delve more into specific outcomes or success metrics for leveraging AI/ML in this context. 6. Discussion of Attitudinal Factors: <ul style="list-style-type: none"> ○ The section on attitudinal barriers to AI and ML adoption (e.g., political unwillingness, resistance from elitist classes) is important but somewhat underdeveloped. More empirical evidence or case studies would strengthen this discussion, providing concrete examples of where and why resistance occurs. 7. Tables and Empirical Data: <ul style="list-style-type: none"> ○ The tables included (such as Table 1 on popular AI technologies and Table 2 on functions of AI) are useful, but more quantitative data or case studies would further substantiate the claims. Incorporating real-world examples of CNI protection through AI and ML, along with metrics of success, would provide a stronger empirical basis for the discussion. | |

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| | <p>8. Over-reliance on Certain Sources:</p> <ul style="list-style-type: none"> ○ The paper repeatedly cites a limited set of sources (e.g., Akinola, Ojo, Yigit), which may give the impression of over-reliance on specific research. A broader range of references from different geographic regions or industries could enhance the paper's credibility and generalizability. <p>9. Conclusion:</p> <ul style="list-style-type: none"> ○ The conclusion effectively reiterates the key points of the study but could go further by offering practical recommendations for policymakers or CNI operators. For instance, the conclusion could propose frameworks for integrating AI/ML into existing cybersecurity protocols or suggest future research directions. <p>Overall Accepted with Major Revision</p> <p>Best Regard</p> | |
| <p>Is the title of the article suitable? (If not please suggest an alternative title)</p> | | |
| <p>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.</p> | | |
| <p>Are subsections and structure of the manuscript appropriate?</p> | | |
| <p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p> | | |
| <p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> | | |
| <p><u>Minor</u> REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p> | | |
| <p><u>Optional/General</u> comments</p> | | |

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PART 2:

| | Reviewer's comment | Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i> |
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| Are there ethical issues in this manuscript? | <i>(If yes, Kindly please write down the ethical issues here in details)</i> | |

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