Review Form2

Book Name:	Mathematics and Computer Science: Contemporary Developments
Manuscript Number:	**Ms_BPR_2649**
Title of the Manuscript:	**Data-Driven Modeling and Machine Learning Integration**
Type of the Article	**Book chapter**

PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback***(Please correct the manuscript and highlight that part in the manuscript. 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. Why do you like (or dislike) this manuscript? A minimumof 3-4 sentences may be required for this part.	**The manuscript is valuable for integrating traditional modeling with machine learning, offering significant insights into various scientific fields. However, a few improvements can enhance its impact:** ▪ **Simplify some mathematical explanations for a broader audience.** ▪ **Include more examples from fields like healthcare or climate modeling to strengthen applicability.** ▪ **Expand the section on challenges with potential solutions, especially regarding model interpretability and data quality.** **These changes will improve readability and broaden the manuscript's relevance.**	
Is the title of the article suitable? **(If not please suggest an alternative title)**	**A more concise alternative title could be: "Integrating Machine Learning with Traditional Mathematical Models".**	
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.	**The abstract is generally clear but could benefit from a few improvements:** ▪ **Briefly mention specific examples, like energy consumption, to clarify applications.** ▪ **Include a quick reference to challenges like data quality and model interpretability.** ▪ **Emphasize the hybrid approach earlier for clarity.** **These changes will make the abstract more comprehensive and aligned with the manuscript's content.**	
Are subsections and structure of the manuscript appropriate?	**The subsections and structure of the manuscript are mostly appropriate, providing a logical flow from introducing the key concepts to discussing different modeling approaches and hybrid models. However, there are a few areas that could be improved:** ▪ **The "Challenges and Future Directions" section could be expanded into individual subsections, such as "Data Quality", "Model Interpretability", and "Computational Efficiency". This would offer a clearer breakdown of each challenge and make the structure more organized.** ▪ **The section on hybrid models would benefit from further division into case studies or domain-specific applications, such as energy consumption, healthcare, and fluid dynamics. This will highlight the versatility of the proposed models.** **These adjustments will improve the readability and organization of the manuscript.**	

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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 minimumof 3-4 sentences may be required for this part.	**The manuscript is scientifically robust and technically sound due to its well-founded discussion on integrating machine learning with traditional mathematical models. The inclusion of detailed mathematical formulations, such as the Navier-Stokes equations and SIR model, demonstrates a solid understanding of both conventional models and modern data-driven approaches. The use of machine learning techniques, like supervised and reinforcement learning, is appropriately described with relevant equations, ensuring the scientific accuracy of the methods presented. Additionally, the manuscript's exploration of hybrid models showcases its technical depth, particularly in addressing real-world problems through interdisciplinary approaches.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	**The references included in the manuscript are somewhat outdated. It is recommended to incorporate more recent studies to reflect the latest advancements and trends in the field.**	
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	The language and English quality of the article need improvement. Enhancing clarity, formal tone, and grammatical accuracy will make the manuscript more suitable for scholarly communications.	
Optional/Generalcomments	Overall, the manuscript is scientifically robust with detailed mathematical formulations and appropriate use of machine learning techniques.However, a few improvements can enhance its impact ▪ Include specific examples (e.g., energy consumption), and challenges (e.g., data quality, model interpretability), and emphasize the hybrid approach in the abstract for better clarity. ▪ Subsections and Structure: ▪ Expand "Challenges and Future Directions" into separate subsections (e.g., "Data Quality," "Model Interpretability"). ▪ Divide the section on hybrid models into domain-specific applications (e.g., energy consumption, healthcare). ▪ The references are somewhat outdated; incorporating more recent studies is recommended. ▪ The language and English quality need improvement for better clarity, formal tone, and grammatical accuracy.	

PART 2:

	Reviewer's comment	**Author's comment***(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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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