

Review Form 3

Journal Name:	Asian Journal of Research in Computer Science
Manuscript Number:	Ms_AJRCOS_129682
Title of the Manuscript:	ADVANCING HYBRID NUMERICAL METHODS FOR NONLINEAR STOCHASTIC DIFFERENTIAL EQUATIONS: APPLICATIONS IN COMPLEX SYSTEMS
Type of the Article	

PART 1: 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>
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 advances SDE modeling by integrating innovative numerical techniques, addressing nonlinear challenges, and enhancing accuracy and efficiency, with broad applications in finance, biology, and engineering, fostering interdisciplinary scientific progress.	
Is the title of the article suitable? (If not please suggest an alternative title)	The title of the article appears to be well-suited, as it effectively conveys the focus on advancing hybrid numerical methods for nonlinear stochastic differential equations, with an emphasis on their application in complex systems.	
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 should be rewritten in a more precise fashion highlighting the main findings.	
Is the manuscript scientifically, correct? Please write here.	Based on the provided summary, the manuscript appears to be scientifically correct. It addresses the key challenges in solving nonlinear stochastic differential equations (SDEs), particularly the difficulties arising from nonlinear drift and diffusion terms, and proposes composite numerical methods to overcome these challenges. The manuscript correctly highlights the limitations of traditional techniques like Euler-Maruyama and Milstein schemes and introduces advanced methods such as IMEX schemes, spectral collocation methods, and machine learning-assisted approaches. These methods are well-established in the literature for improving stability, accuracy, and computational efficiency. Furthermore, the manuscript connects these numerical techniques to practical applications in various fields, which is scientifically sound.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	Include some more references of recent works relevant to this study. All references must be cited in the text and vice-versa.	

Review Form 3

<p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>Check the grammar and syntax of the whole manuscript carefully and revise the manuscript accordingly. English should be improved.</p>	
<p><u>Optional/General</u> comments</p>	<p><u>Report:</u> This paper primarily reviews well and it has potential for publication. To enhance its contribution and address specific concerns, the authors should implement the following corrections. Once these revisions are made, the paper may be suitable for consideration.</p> <ol style="list-style-type: none"> 1. The Abstract should be rewritten in a more precise fashion highlighting the main findings. 2. Check the grammar and syntax of the whole manuscript carefully and revise the manuscript accordingly. 3. Data sources should be clearly provided for transparency and to ensure reliability of the information presented. 4. Include some theorems or propositions in your paper to strengthen your arguments and enhance the overall credibility of your research findings. 5. Please clarify whether any numerical methods have been used; this should be explicitly stated in the paper. 6. On page 7, rewrite the sentence "By perturbation, we man when a problem change (usually slight) in the values of some of the underlying parameters, made to obtain the desired solution or to study the stability of a given solution (Kluppelberg and Kuhn, 2002). 7. English should be improved. 8. The quality of the figures must be improved. 9. Include some more references of recent works relevant to this study. All references must be cited in the text and vice-versa. 10. Summarize the findings of this work in "Conclusions". 	

PART 2:

	<p><u>Reviewer's comment</u></p>	<p><u>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)</u></p>
<p><u>Are there ethical issues in this manuscript?</u></p>	<p><u>(If yes, Kindly please write down the ethical issues here in details)</u></p>	

Reviewer Details:

<p>Name:</p>	<p>Asraful Islam</p>
<p>Department, University & Country</p>	<p>Jagannath University, Bangladesh</p>