

Review Form 3

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_130180
Title of the Manuscript:	An Almost Exact Algorithm for the General Solution of Second Order Linear and Nonlinear Fredholm Integro-Differential Equations
Type of the Article	

PART 1: 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. A minimum of 3-4 sentences may be required for this part.	<ul style="list-style-type: none">Novel Approach: Introduces a new technique using the derivative of Lucas polynomials in matrix form for solving Fredholm integro-differential equations.Wide Applicability: Capable of solving equations of various orders, including mixed Fredholm-Volterra integro-differential equations, broadening the scope of applications.Improved Accuracy: Demonstrates superior accuracy compared to existing methods, enhancing reliability in numerical computations.Scientific Contribution: Offers a practical and efficient method for researchers and professionals in mathematics, physics, and engineering, fostering further advancements in solving complex equations.	
Is the title of the article suitable? (If not please suggest an alternative title)	I suggest the authors consider revising the title to "A Novel Algorithm for Solving Fredholm Integro-Differential Equations Using Lucas Polynomials." This title is concise and highlights the innovative approach and the specific mathematical technique employed. It effectively communicates the manuscript's core contribution and is likely to engage researchers in the fields of numerical methods and applied mathematics.	
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.	<ul style="list-style-type: none">The abstract could include a brief background on the importance and applications of Fredholm integro-differential equations to provide context.Emphasizing its advantages over existing methods.Including specific numerical results or comparisons would strengthen the abstract and highlight the method's efficiency.Subjective terms like "amazing" and "better accuracy" should be replaced with precise, objective statements supported by data.The abstract would benefit from a clearer structure to improve readability and convey the key contributions effectively.	
Is the manuscript scientifically, correct? Please write here.	The manuscript appears to be scientifically correct, with a sound approach for solving Fredholm integro-differential equations using Lucas polynomials. The methodology is well-defined, and the use of Gaussian elimination for solving the resulting algebraic systems is appropriate. The theoretical foundation of applying polynomial derivatives to integro-differential equations is logically explained. Additionally, the manuscript provides numerical validation through test problems, confirming the validity of the method. However, further clarification and deeper analysis of the underlying assumptions and potential limitations would strengthen the scientific rigor of the manuscript.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	<p>I suggest adding the following recent references to the manuscript, particularly in the introduction, to highlight the latest developments in the field and provide a broader context for the proposed method:</p> <ol style="list-style-type: none">DOI: 10.3390/fractalfract9010020DOI: 10.22436/jmcs.038.03.03DOI: 10.1080/27690911.2024.2436440DOI: 10.22436/jmcs.034.04.04 <p>Including these references will ensure the manuscript is up-to-date with current research and will provide a stronger foundation for the proposed method within the broader context of solving integro-</p>	

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	differential equations.	
Is the language/English quality of the article suitable for scholarly communications?	Yes	
Optional/General comments	<div>1. The results are correct and new. The following points may be considered to improve the presentation of this paper:</div> <div>2. What are the additional way in which the manuscript could be improved?. A remark is suggested to be added.</div> <div>3. Grammatical error and some typos exist that should be checked and corrected throughout the paper.</div> <div>4. From the presented topics in this paper, the authors should propose some future research topics in the conclusion part.</div> <div>5. The listed results especially formulas and analyses should be revised to avoid any errors.</div> <div>6. English is generally good; I think it needs to be polished further and some typos need to be revised. Further punctuation marks should be checked throughout the paper, especially after the equations and at the end of the statements.</div> <div>7. Define the used symbols clearly and numerate all equations that appear. Further, reformulate the conclusion to reflect the contents of the paper.</div> <div>8. We know that the proposed model comes from real-world applications. So, why are the existence and uniqueness studied here?</div>	

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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