

Review Form2

Book Name:	Science and Technology - Recent Updates and Future Prospects
Manuscript Number:	Ms_BPR_2197
Title of the Manuscript:	Least Significant Bit and Discrete Wavelet Transform Algorithm Realization for Image Steganography Employing FPGA
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.		
Is the title of the article suitable? (If not please suggest an alternative title)		
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.		
Are subsections and structure of the manuscript appropriate?		
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.		
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.		

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Minor REVISION comments		
Is the language/English quality of the article suitable for scholarly communications?		
Optional/General comments	Comprehensive review of the document titled "Least Significant Bit and Discrete Wavelet Transform Algorithm Realization for Image Steganography Employing FPGA": The book chapter has a well-defined objective, focusing on developing robust image steganography techniques using Least Significant Bit (LSB) and Discrete Wavelet Transform (DWT). The combination of these methods is sound, considering their widespread use in steganography. The related works section provides a good overview of various steganography techniques, comparing spatial domain methods with those in the transform domain. The discussion is helpful in establishing the context for the research and justifying the choice of LSB and DWT. The document demonstrates a good understanding of both LSB and DWT techniques, including their implementation details, performance metrics (PSNR, MSE, BER), and how they apply to image steganography. The implementation on FPGA (Field Programmable Gate Array) adds a practical aspect to the research, highlighting the performance gains in processing time when compared to software implementations. The results section provides quantitative metrics that compare the performance of LSB and DWT methods, supporting the claims made in the paper. However, the following sections must be improved for its practicability and readability. Clarity and Language: The paper could benefit from a thorough review for grammatical errors and sentence structure. Some sections are difficult to follow due to awkward phrasing. The explanations of concepts such as DWT could be simplified for better readability, especially for readers who may not be experts in the field. Structure and Flow: The flow between sections could be improved. For instance, the transition from the introduction to the literature review is abrupt. A brief roadmap at the end of the introduction would help guide the reader through the paper's structure. Some sections, like the explanation of LSB and DWT, are repeated in different parts of the document, which can be redundant. Experimental Design: The paper would benefit from a more detailed explanation of the experimental setup. Information such as the type and resolution of images used, the hardware specifications for FPGA implementation, and the specific parameters used in the DWT could be more explicitly stated. The choice of using only gray-scale images for LSB implementation is noted, but the reasoning behind this choice could be better justified. Including tests on colour images could broaden the applicability of the research. Comparative Analysis: While the results section compares the LSB and DWT methods, the paper could benefit from a more detailed comparative analysis with other state-of-the-art steganography methods. This would place the research in a broader context and help demonstrate its novelty and impact. A discussion on the trade-offs between security (robustness) and capacity (amount of data hidden) could provide additional insight into the practical applications of the proposed techniques. Visual Aids: The inclusion of more figures, such as visual examples of cover images, stego-images, and extracted secret images, would enhance the reader's understanding of the processes described. The diagrams that are included (e.g., the general information hiding system, one-level decomposition using DWT) could be larger and more detailed for better readability.	

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	Conclusions and Future Work: The conclusion section could be expanded to include a discussion on the limitations of the current work and possible avenues for future research. This could involve exploring different types of wavelets in the DWT, testing with different types of cover images, or investigating more advanced FPGA implementations. Mentioning potential real-world applications of the proposed methods could also help underscore the practical significance of the research. Overall Assessment: The document presents a well-researched and technically sound approach to image steganography using LSB and DWT techniques. However, it could benefit significantly from improvements in clarity, structure, and the depth of analysis. With these enhancements, the paper would be more accessible to a broader audience and provide a stronger contribution to the field of digital image steganography.	
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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>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

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