## Review Form 3

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| Journal Name: | **Asian Journal of Research in Computer Science** |
| Manuscript Number: | **Ms_AJRCOS_124677** |
| Title of the Manuscript: | **Electromagnetic Radiation for Nonlinear Dynamics of Two-Neuron Based Memristive Hopfield Neural Network with Synaptic Crosstalk** |
| Type of the Article | |

**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)* |
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| **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.** | The manuscript addresses a crucial topic by exploring the chaotic dynamics of a two-neuron-based memristive Hopfield Neural Network (HNN) under the influence of electromagnetic radiation (EMR). It presents significant implications for neuroscience and neural network modeling, particularly in understanding nonlinear neural dynamics and synaptic crosstalk. The use of Pspice simulations adds technical depth, making the study valuable for both theoretical and applied research. I appreciate the manuscript's focus on chaos theory, a critical area in understanding complex neural behaviors. | |
| **Is the title of the article suitable?**<br>**(If not please suggest an alternative title)** | The title is descriptive but could be more concise. A suggested alternative could be: "Chaotic Dynamics of a Two-Neuron Memristive Hopfield Neural Network Under Electromagnetic Radiation." This version still reflects the core content while being slightly more focused. | |
| **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 adequately summarizes the key findings, discussing the influence of EMR and synaptic crosstalk on HNN dynamics. However, it could be clearer. I suggest improving clarity by explicitly mentioning the main results in terms of how EMR affects chaotic behavior and phase portraits. Additionally, mentioning the practical applications or relevance to real-world systems could strengthen the abstract. | |
| **Are subsections and structure of the manuscript appropriate?** | The structure of the manuscript is appropriate, with clear divisions between different sections, including theoretical modeling, dynamic analysis, and circuit simulation. The progression from introducing the problem to presenting simulations and results is logical. However, the flow between subsections could be improved for better readability, particularly the transitions between theoretical concepts and simulations. | |
| **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.** | The manuscript appears scientifically sound and technically robust, supported by detailed mathematical models and simulations. The memristive HNN model is well-structured, and the analysis using Lyapunov exponents and phase portraits effectively captures the dynamic behavior of the system under different EMR conditions. The use of Pspice for simulation adds technical credibility. Overall, the study demonstrates an appropriate balance between theory, mathematical modeling, and practical simulation, making it a scientifically valid contribution to the field of nonlinear neural network dynamics. | |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**<br>**-** | The references are relevant and cover a wide range of recent studies on memristors, neural networks, and nonlinear dynamics. Most sources are recent, indicating that the manuscript is well-grounded in contemporary research. However, including more very recent references from the last couple of years (e.g., 2022-2023) would further strengthen the work's relevance. | |

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| Minor REVISION comments<br><br>**Is the language/English quality of the article suitable for scholarly communications?** | The language is mostly clear but could be improved for scholarly communication. Some sentences are long and complex, making them difficult to follow. Simplifying the sentence structure and improving transitions between ideas would enhance readability. Additionally, minor grammatical corrections, such as addressing inconsistent tense usage, would improve overall clarity. | |
| **Optional/General** comments | Based on the overall quality and content of the manuscript, I would rate the article a 7<br>Strengths: The study tackles a significant topic in neural networks, exploring complex and important concepts like chaotic dynamics and memristive systems. The use of both theoretical modeling and practical simulations enhances its scientific value. The manuscript includes relevant, recent references and is well-grounded in current research.<br>Areas for Improvement: The abstract could be clearer and more concise in stating the main findings. The manuscript's structure could be better organized to improve readability and flow between sections. The language, while understandable, needs polishing to ensure smoother communication of complex ideas.<br>With minor improvements in clarity, organization, and language, the article could reach a higher score. | |

**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)* |
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| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* | |

**Reviewer Details:**

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| Name: | **Farhang Salehi** |
| Department, University & Country | **Iran** |