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| Journal Name: | [Advances in Research](http://www.sciencedomain.org/journal/31) |
| Manuscript Number: | **Ms\_** **AIR \_136474** |
| Title of the Manuscript: | **A Unified Formal Framework for Brain HyperGraphs and Symptom HyperNetworks** |
| Type of the Article | **Original Research Article** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (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.** | * First of all, I congratulate the authors for selecting this unique topic related to the field by comparing Brain Hypergraphs and Symptom Hypernetworks. * Definitely this manuscript helps the scientific community to carry on with their research work, if few corrections need to be incorporated. * Theoretical proof has been given for scientific community, validation part the author has left to the readers/future researchers. | Thank you very much for your valuable comment. |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | No - “Synchronization of Brain Hypergraphs and Symptom Hypernetworks” | Thank you very much for your valuable comment.  I have carefully considered your suggestion; however, since the concept of synchronization is not a central theme of this paper, I believe the current title better reflects its focus.  That said, after further consideration, I have revised the title to make it more engaging.  I would appreciate it if you could review the updated version.  Thank you for your kind understanding. |
| 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 foremost thing is the author is having slight confusion on the term “Hyperedge”. A Single edge can join any number of vertices is called Hyperedge. * But the author has mentioned single edge as Hyperedge – Abstract 4th line * The word (Hyperedge) should have come after multiple vertices in 5th line. * Moreover Abstract need to be more precise about the study & the development but not just like introduction part. * Suggested to remodify the abstract part. | Thank you very much for your valuable comment.In accordance with your suggestion, the abstract has been revised, and overall readability has been improved throughout the manuscript. |
| Is the manuscript scientifically, correct? Please write here. | * Few terms need to be modified - either the author has to fix with Hypergraph or Hyper Graph, single word means better to use Hypergraph, similarly Hypernetworks or Hyper Networks. * Throughout the study, the author has used the above mentioned terms in various forms. * Usage of “ we “ should be avoided * “Our contribution” – to be replace with “Proposed study” * Few notation errors are observed ( **need to be check in throughout the study**) –Definition -2.7 Superhyper operation can be denote by SH0(m,n) ,   Definition.2.15 – Hypernetwork can be denoted as HN, etc.,   * Prepositions can be added for the required theorems. Is it applicable? * Only if parts are proved in all the theorems. Can prove the other way also. Is it possible? * Theoretically strong but application and validation part is missing in the manuscript. | Thank you very much for your valuable comment. The descriptions of Hypergraph, Hypernetwork, and Superhypergraph have been revised.  In accordance with your suggestion, the use of “We” has been minimized wherever possible.  The phrase “Our contribution” has been replaced with “Proposed study,” and typographical errors have been corrected to the fullest extent.  As for the section on “Few notation,” no logical inconsistencies were identified, so a revision was deemed unnecessary; however, typographical errors were corrected.  Regarding the prepositions, your comments were accurate. Taking into account the mathematical stability of the definitions, I have revised and added content accordingly. I would appreciate it if you could review the proofs to ensure their correctness.  In light of your suggestion about “Only if parts are proved in all the theorems,” I have added the necessary theorems throughout and revised the manuscript accordingly. Please check that all the proofs are now complete and consistent.  Lastly, a note has been added in the Introduction to emphasize that future application and validation are expected to be conducted by domain experts. |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | * More than sufficient, but it can be arranged as per year wise. * Reference numbers 16, 23, 28, 32, 62 and 86, the word pages are written for page numbers whereas in the rest of the references only numbers are mentioned, kindly follow IEEE format for references. | Thank you very much for your valuable comment.  Regarding the references, I would like to address them during the editing stage. |
| Is the language/English quality of the article suitable for scholarly communications? | No, Need to be improved (Avoid Grammatical errors, avoiding past tense for their future work & the usage of ‘we’) | Thank you very much for your valuable comment. The necessary revisions have been made. |
| Optional/General comments | **RECOMMEDED WITH CORRECTIONS** | Thank you very much for your valuable comment. |

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| **PART 2:** | | |
|  | Reviewer’s comment | **Author’s Feedback** (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 detail)* | Thank you very much for your valuable comment. |