Reviewer Comments:

Reviewer 1

Reviewer Comments:

The paper presents a detailed and innovative approach to hand gesture recognition using electromyography (EMG) signals, utilizing a 4-stream deep learning architecture. The methodology is well-described, and the experiments are thorough. They showcase the model's superior performance on benchmark datasets Ninapro DB1 and Ninapro DB9 compared to existing methods.

Major Revisions:

Clarity and Structure: The article's structure could be more precise, making it easier for readers to follow the flow of ideas. Consider restructuring the manuscript to improve clarity and coherence.

Response: Thank you for your feedback. In response to your concern, we updated the methodology in our revised manuscript. Please see the methodology section for details.

Methodology Description: While the methodology is detailed, some parts, such as the feature selection process and the specifics of the concatenation technique, could be explained more clearly. Providing additional examples or diagrams could aid in understanding these concepts.

Response: We appreciate your comments on the methodology section. **We updated the feature concatenation and feature selection approach in our revised manuscript. Please see the Feature Concatenation and Feature Selection part in the revised manuscript. Additional Diagrams and Examples:**

- Figure 4(a) demonstrates the channel attention used to select a channel here. These diagrams are accompanied by detailed captions that explain each step of the process.

Experimental Setup: The description of the experimental setup, including the hardware used and the dataset division process, is lacking detail. Please provide more information to ensure the reproducibility of the results.

Response: Thank you for pointing this out. In response to your concern, we included the "Experimental Setup" subsection in the manuscript under experiment result. Please see the Experimental Setup section for details.

Discussion and Comparison: The discussion section needs more depth, especially regarding the comparison with state-of-the-art methods. Expand this section to provide a more comprehensive analysis of the results and their implications.

Response: Thank you very much for your concern. We included a Discussion section in our revised manuscript according to your concern. Please see the discussion section under the experiment result for details.

Minor Revisions:

1. **Language and Grammar: There are several grammatical errors and awkward phrasings throughout the manuscript. Proofread the text carefully to improve readability.**
   Response: Thank you for your feedback. In response to your concern, we proofread the paper. Please see the manuscript for details.

2. **Acronyms and Abbreviations: Define all acronyms and abbreviations at their first mention to avoid confusion.**
   Response: Thank you for raising your concern. We reviewed the entire manuscript and updated the abbreviations related to concerns. Please see the manuscript for details. The entire article needs proofreading.

3. **Consistency: Ensure consistency in terminology and formatting throughout the manuscript.**
   Response: Thank you for pointing this out. We appreciate the reviewer's attention to detail and the suggestion to ensure consistency in terminology and formatting. To address this comment, we have undertaken the following actions:

1. **Terminology Consistency:**
   ○ We reviewed the manuscript to ensure that all technical terms are used consistently throughout the text. For example, we standardized the use of terms such as "sEMG," "hand gesture recognition," "TCN," "LSTM," and "CNN."
   ○ We created a glossary of key terms to ensure that each term is defined once and used consistently in the same way throughout the manuscript.

2. **Formatting Consistency:**
   ○ We standardized the formatting of section headings, subheadings, and sub-subheadings to follow the same style. This includes consistent use of capitalization and font sizes.
   ○ We ensured that all figures, tables, and equations are formatted uniformly. This includes consistent labeling and captioning styles.

3. **Citation Style:**
   ○ We reviewed and standardized the citation format to ensure all references are cited in the same style throughout the manuscript.
   ○ We checked the reference list to ensure all entries are formatted consistently according to the required citation style.

4. **General Formatting:**
   ○ We reviewed the entire document for consistent use of fonts, font sizes, and line spacing.
   ○ We standardized the formatting of bullet points, numbering, and indentation.

According to your concer we update the information inour manuscript::

1. We ensured that all technical terms and abbreviations are used consistently throughout the manuscript. For instance, we standardized the use of "sEMG" instead of switching between "sEMG" and "EMG."
2. All section headings, subheadings, and sub-subheadings have been standardized in terms of style and formatting.
3. Figures, tables, and equations are now uniformly labeled and captioned.
4. The citation and reference list formats have been standardized to follow the required style consistently.

These changes aim to improve the readability and professionalism of the manuscript, ensuring that the content is presented in a clear and cohesive manner.

4. **Data Presentation: Consider using clearer and more concise language to describe the datasets and their attributes.**

   Response: Thank you very much much for your concern. We modified and updated the dataset description in the revised manuscript. Please see the Dataset section for details.

5. **Conclusion: Strengthen the conclusion by summarizing the essential findings and their implications more effectively.**
   Response: Thank you very much for your concern. According to your concern we modified and update the conclusion section in our revised manuscript.

Overall, while the study shows promise, addressing these major and minor revisions will significantly improve the quality and readability of the manuscript.

Response: We appreciate your comprehensive feedback. We are committed to addressing both the major and minor revisions outlined. By improving the clarity, consistency, and overall presentation of our manuscript, we aim to significantly enhance its quality and readability. Thank you for your valuable suggestions.

Reviewer 2
1. **The article addresses an important issue in EMG-based hand gesture recognition.**
   Response: Thank you for acknowledging the importance of our work. We are pleased that the relevance of our study is recognized.
2. **I suggest including the dataset as a subsection in the methodology section.**
   Response: We appreciate your suggestion. According to your suggestion we moved the dataset section under the methodology section. Please see the methodology section for details.
3. **None of the used architectures are presented in a form that readers and I can reproduce and develop, so I cannot judge the originality of the work. Most parameters are not defined, and more importantly, the hyperparameter tuning is missing.**
   Response: Thank you very much for your concern. We updated the methodology

section to address your concern. In addition, I included an algorithm in the methodology section. Please see the methodology part for details. We also included the hyperparameter in our revised manuscript under the section of the environment setting. My hyperparameter setting is below: In our model, we have carefully selected and optimized hyperparameters to ensure the best performance. The number of units in the LSTM layers is set to 64, balancing the model's ability to capture temporal dependencies while avoiding overfitting. We use 32 filters with a kernel size of 3 in the CNN layers, effectively capturing spatial features in the data. For all Temporal Convolutional Network (TCN) layers, we set the number of filters to 64, the number of residual blocks stacked to 1, and the kernel size to 3, balancing the ability to capture local patterns with computational efficiency. These hyperparameters were optimized through extensive experimentation and cross-validation to ensure optimal performance and computational efficiency of the model.

4. **Regarding the results, only accuracy is presented, which is the worst performance metric to consider when evaluating classification models. Please provide more performance metrics such as Precision, Recall, F1-Score, Area Under the Receiver Operating Characteristic Curve, and Area Under the Precision-Recall Curve.**
   Response: Thank you very much for raising your concern. In response to your concern, we included subject-wise precision, recall, and F1 score for the DB1 dataset, which consisted of 27 subjects, in Table 4. In Table 6, we included average precision, recall, and F1 score for DB1 and DB9.

5. **Many abbreviations, such as TCN, LSTM, and EMG, are not defined or defined at the appropriate time. Some abbreviations, such as CNN, SVM, and ML, are defined more than once. Please review the entire article and fix this issue.**

   Response: Thank you for raising your concern. We reviewed the entire manuscript and updated the abbreviations related concerns. Please see the manuscript for details.

Reviewer 3
Before accepting this article, you should restructure the grammatical structure to reduce the errors.
Response: Thank you very much for raising your concern. We updated the manuscript based on the concern of the grammatical structure. Please see the manuscript for details.