

Peer Review

Review of: "Automatic Construction of Pattern Classifiers Capable of Continuous Incremental Learning and Unlearning Tasks Based on Compact-Sized Probabilistic Neural Network"

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The authors in this paper introduce a technique to be incorporated with probabilistic neural networks that dynamically changes based on the tasks and is smaller in comparison to other MLP-based models. The authors demonstrated the performance of their model on multiple benchmarks in different learning scenarios.

Comments:

1. A standard PNN has a three-layered network. How would this be scalable to larger datasets then?
Rephrase the statement to address this confusion.
2. In the proposed method section 2.4, explain how the $d_{\max}$ is being computed since it is the central idea behind the proposed novelty. It is not clear how the dynamic distance measurement is assisting with the learning process, especially in the class incremental learning scenario.
3. On adding RBFs for incorrect classification, how would the network modulate the ever-growing RBFs? Is there a scenario for removing incorrectly added RBFs? I am not sure if unlearning addresses this. Do you have a limit to the number of RBFs that can be added or removed during the respective phases? It would be much easier to read if all these details were added to the explanation of the concept.
4. In the results section, the plots in Figure 2 are very hard to read. Either use colors or use different symbols for the options in the legend. Having good visualization is critical for the readability of the paper.

5. The tasks performed are very simple in terms of image classification. Please explain the potential drawbacks of the proposed approach on larger datasets or tasks. Moreover, the model is only compared with an older work on CL; how does the proposed approach fare with respect to the state-of-the-art models? It is okay to not have the best accuracy, but highlight what advantage the proposed approach brings in. Is it in terms of the number of computations, or lesser overhead (in terms of memory), etc.? Try to highlight that.
6. Figures 4 and 5 are also hard to read. The unlearning experiment setup is well written; however, explain how the $d_{\max}$ value varies with respect to the changes during the unlearning and the learning phase.

The concept is interesting and presents a promising approach. However, a lot of restructuring is required in presenting the concept and the results of the proposed approach. Working on those would significantly improve the readability of the manuscript.

Declarations

Potential competing interests: No potential competing interests to declare.