## 1. Ensemble Neural Networks with Random Weights for Classification Problems

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**Abstract:** To improve the prediction accuracy and stability of neural networks with random weights (NNRWs), we propose a novel ensemble NNRWs (E-NNRW) in this paper, which initializes its base learners by different distributions to improve their diversity. The final prediction results of the E-NNRW model are determined by these base learners through a voting mechanism, which minimizes the specific "blind zone"of a single learner, thus achieving higher prediction accuracy and better stability. Taking the random vector functional link network (RVFL), one of the most representative algorithms in NNRWs, as an example, we fully evaluate the performance of the proposed algorithm on nine benchmark classification problems. Extensive experimental results fully demonstrate the effectiveness of our method. © 2020 ACM.
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