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Paper Review: Analysis of prediction accuracy of classification problem based on neural networks

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Classification problem is a crucial research topic in machine learning. With the rise of artificial neural networks in recent years, the classification algorithms based on neural networks have achieved great success in various fields. In this paper, we prove that the prediction accuracy of a classification algorithm can be controlled by the loss function of the network and the scale of the training set, precisely (i) it approximates to 1 when both the integral probability density and the experimental accuracy tend to 1, (ii) it approximates to 1 when the integral probability density tends to 1 while the loss function tends to 0. Moreover, we give an estimate of the integral probability density by the number of samples in training set. Our new theoretical issues imply the effectiveness of the neural network in classification.