Divide & loop in Neural Network

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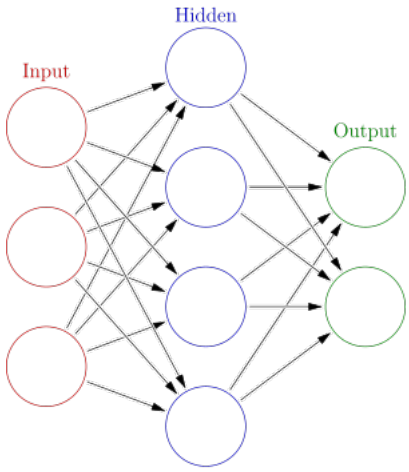
Abstract
In this paper, we develop a structure of a divide & loop neural network that can improve the classification performance in neural network learning with the similar kind of input data. To solve the classification errors by the similar input data at the learning of these neural network, it was used how to find the other input data of the data or detailed data scaling. However, in the above-described solution, the fundamental problem of similar input data has not been resolved. To solve this problem, we propose a method of the loop neural network by divide in accordance with the error learning data. In this paper, we provide a method that can improve it by classification rate by repeating a neural network in order to reduce the weight of similar data indirectly to solve the problem.

Keywords : similar data, neural network, Divide error, loop

Introduction

Neural Network is one of the machine learning technique. By learning data consisting of several groups of which it is pattern recognition for classification. Applying Pattern recognition data of many groups, the pattern recognition characteristics concentrate enhances the classification rate, although a small number of similar, it is not possible to clearly classify the group of data of the other point type. The problem is tendency ignoring minor group was occured in condition of classifying major group. In this paper, we try to solve this problem.



<Figure 1> Neural network

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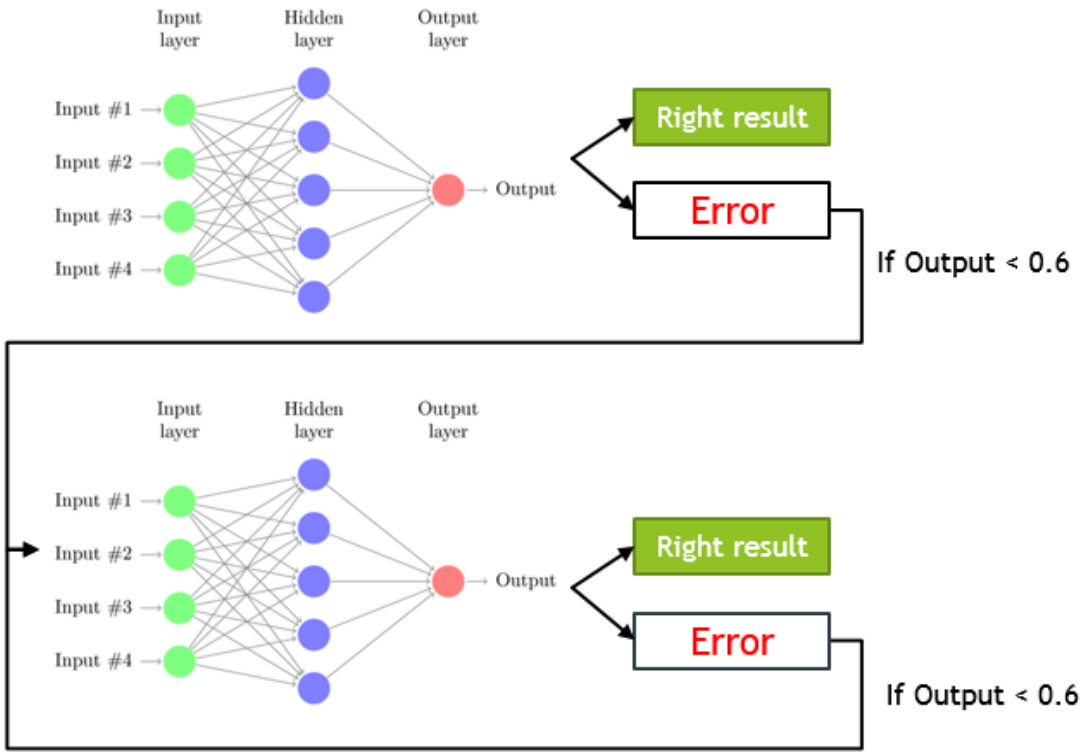
In order to solve the mentioned problem in the introduction, first to confirm the learning result in the output at the time of learning of the data in the Neural network. The results come out 0-1. After the classification of the data, the sum of the results of the value of all the groups is 1. Usually we define valid output data is 0.7 or more. Then, we can define invalid output data is 0.6 or less. Reason is because it is not able to classify the data with other group.



<Figure 2> Divide & loop in Neural network

Proceeds Neural network, and collect the results of the output data 0.6 or less. It generates a new input dataset using this data. When relearn the Neural network, the re-learning of the group together data similar, so it may be obtained also reduces the effect the number of groups, it is possible to expect a good classification rates.

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