

Hopfield Neural Network with Random Cutting Weights for Traveling Salesman Problem

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SUMMARY

The neural network is a calculation model which can replicate some functions of human brain. In addition, this neural network can be applied to data processing, self organization mapping, pattern recognition, data mining, and so on. In particular, the Hopfield neural network has been researched extensively. This is applied to solving method for the combinatorial problems [1]-[3]. However, the Hopfield neural network often leads to the local minimum. It makes difficult to optimize the problem because of stopping the solutions at local minimum.

In this study, we focus on the synapse pruning. The synaptic pruning is that the excess couplings between the neurons are disconnected. Now, we investigate solution abilities of the Hopfield neural network with the random cutting weights for TSP. By introducing the synapse pruning for solving TSP, we expect that accuracy of the solution is increased. In addition, we discuss influences of the Hopfield neural network with random cutting weights for TSP.

REFERENCES

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