HW1

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編譯:

henryc@52-0460994-H1:/mnt/c/Users/henry/desktop/College/Junior/DataSturcture/HW1_NN\$ make_

Run:

henryc@52-0460994-H1:/mnt/c/Users/henry/desktop/College/Junior/DataSturcture/HW1_NN\$ cd bin henryc@52-0460994-H1:/mnt/c/Users/henry/desktop/College/Junior/DataSturcture/HW1_NN/bin\$ /backpro

```
henryc@52-0460994-H1:/mnt/c/Users/henry/desktop/College/Junior/DataSturcture/HW1_NN$ ./backprop
Enter the number of Layers in Neural Network:

Benter number of neurons in layer[1]:

Enter number of neurons in layer[2]:

Enter number of neurons in layer[3]:

Created Layer: 1

Number of Neurons in Layer 1: 2

Neuron 1 in Layer 1 created
Neuron 2 in Layer 1 created

Created Layer: 2

Number of Neurons in Layer 2: 2

Neuron 1 in Layer 2 created

Neuron 2 in Layer 2 created

Created Layer: 2

Neuron 1 in Layer 2 created

Created Layer: 3
```

在這次的 Neural network implement 中

總共有三層

輸入層 兩個 Neuron

有四種輸入:

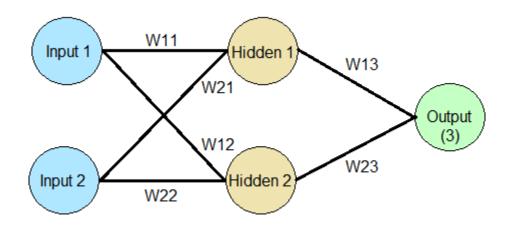
00 \ 01 \ 10 \ 11

隱藏層 兩個 Neuron

輸出層 一個 Neuron

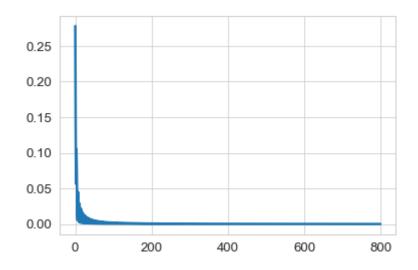
輸出為0或1

示意圖:



 $Source : \underline{https://codingvision.net/c-backpropagation-tutorial-xor}$

Cost function:



從上圖可以看的出來隨著疊代次數的增加,其 cost 會逐漸降低。 而其將低的速度會隨著 learning rate 的改變而有所影響。

Reference:

https://github.com/mayurbhole/Neural-Network-framework-using-Backpropogation-in-C