Assignment 8 - report - Soft Computing

Mtech - 2nd Sem

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07-03-2021

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1. when input is =[1, 1, 1, 1, 1, 1] out put is = [1.0, 1.0, 1.0]
2. when input is =[-1, -1, -1, -1, -1, -1] out put is = [-1.0, -1.0, -1.0]
3. when input is =[1, -1, -1, 1, 1, 1] out put is = [-1.0, 1.0, 1.0]
4. when input is =[1, 1, -1, -1, -1, -1] out put is = [1.0, -1.0, 1.0]
5. when input is =[1, 1, 1] out put is = [1.0, 1.0, 1.0, 1.0, 1.0, 1.0]
6. when input is =[-1, -1, -1] out put is = [-1.0, -1.0, -1.0, -1.0, -1.0, -1.0]
7. when input is =[-1, 1, 1] out put is = [1.0, -1.0, 1.0 , 1.0, 1.0, 1.0]
8. when input is =[1, -1, 1] out put is = [1.0, 1.0, 1.0 , -1.0, -1.0, -1.0]

After implimenting BAM from scratch for the given pair of inputs,
only at positions colored red are showing wrong values
This might be because BAM can only store associations not
exceeding number of neurons in small layer. In our question
number of neurons in small layer is 3 and number of associations
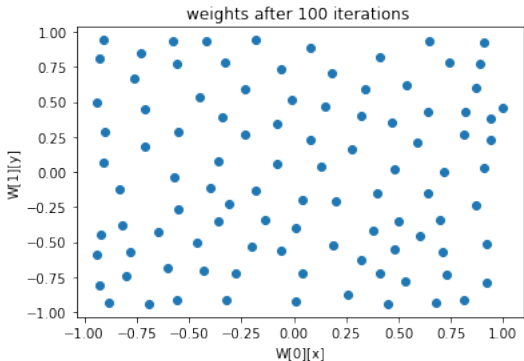given are 5

PROBLEM 2- Kohonen network

hyper parameters = [train-neurons = 1500, input-neurons = 2, output-neurons = 100, iterations = 0]   initial random weights scattered plot

initial randomly generated weights
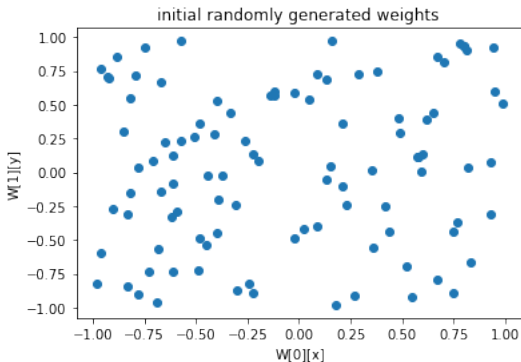
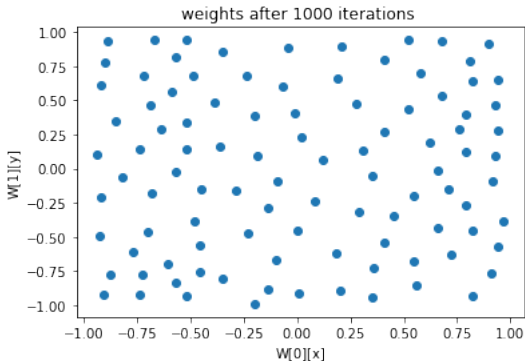1. weights are randomly distributed

PROBLEM 2- Kohonen network

hyper parameters = [train-neurons = 1500, input-neurons = 2, output-neurons = 100, iterations = 100]   Weight distribution after 100 iterations

weights after 100 iterations

1. Weights are uniformly distributed

PROBLEM 2- Kohonen network

hyper parameters = [train-neurons = 1500, input-neurons = 2, output-neurons = 100, iterations = 1000]   Weight distribution after 1000 iterations

weights after 1000 iterations

1. Weights are uniformly distributed

PROBLEM 2- conclusions

1. As number of iterations increases weights are more evenly distributed resulting in activation of only specific neuron when specific input is given