

Homework-03

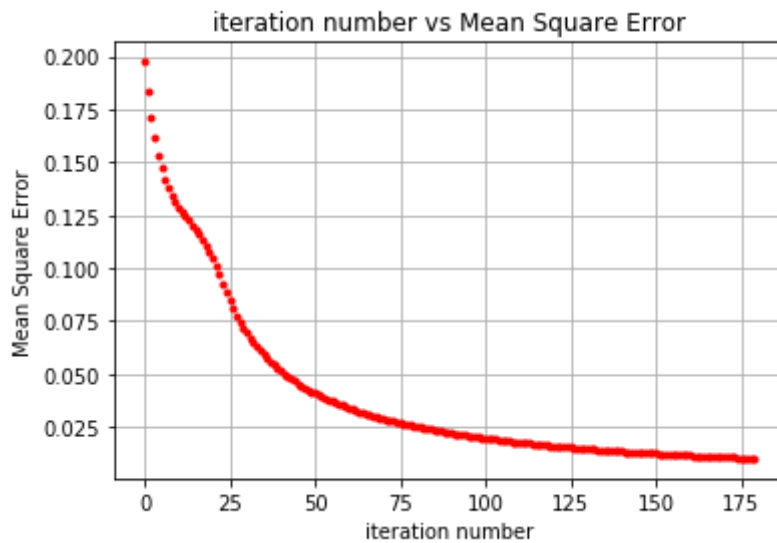
Neural Networks - Back-propagation pass

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I successfully implemented backpropagation and training functions corresponding to Mean Square Error loss function.

1.And

Loss vs training rounds

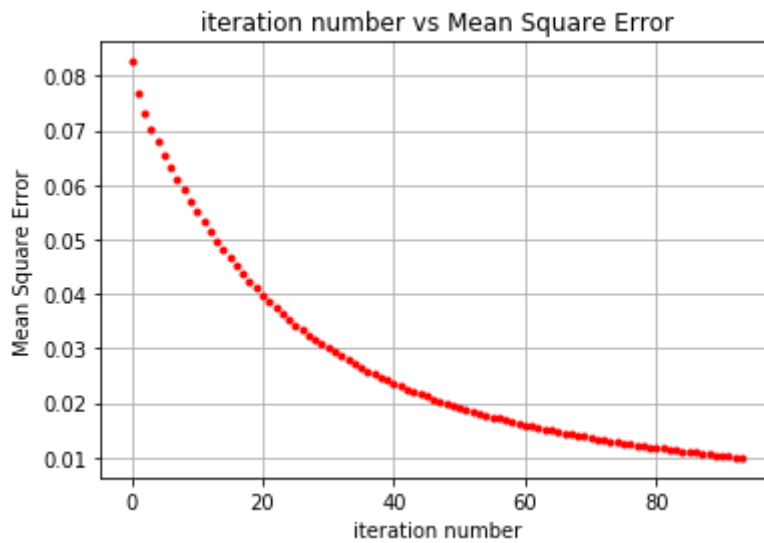


Theta parameters comparison

Neural Network	bias weight	neuron1 weight	neuron2 weight
pre-defined theta	-1.5	1	1
trained theta	-4.9380	3.2165	3.2167

2.Or

Loss vs training rounds

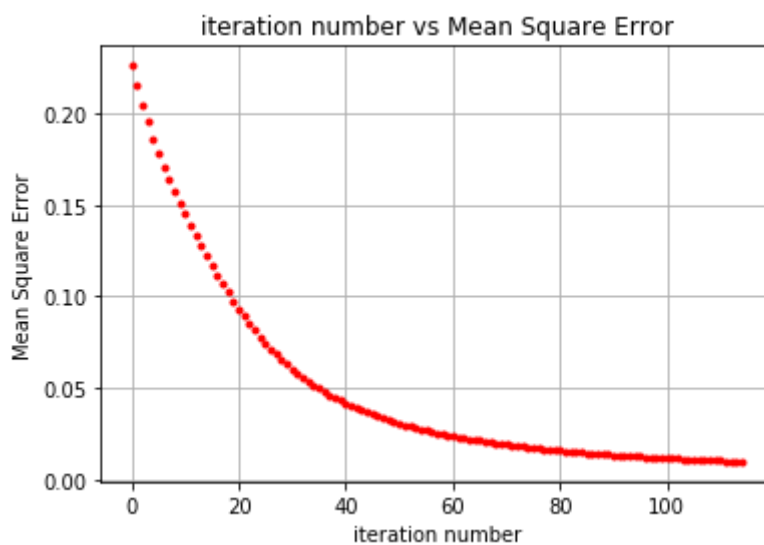


Theta parameters comparison

Neural Network	bias weight	neuron1 weight	neuron2 weight
pre-defined theta	-0.5	1	1
trained theta	-1.2916	3.2023	3.2195

3.Not

Loss vs training rounds



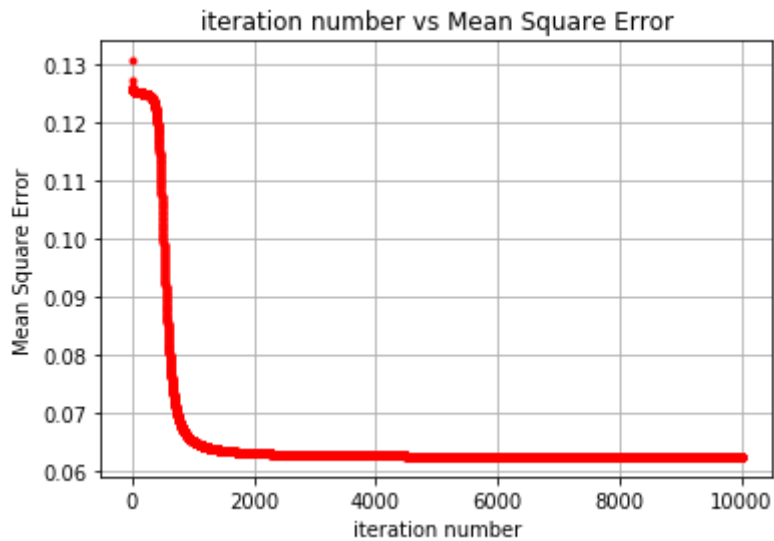
Theta parameters comparison

Neural Network	bias weight	neuron1 weight
pre-defined theta	0.5	-1

trained theta	1.6908	-3.6452
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4.Xor

Loss vs training rounds



Theta parameters comparison

L0-L1(trained / predefined)	bias11	neuron11	neuron12
neuron21	2.5949 / -50	4.6864 / 60	-4.6630 / -60
neuron22	-1.9076 / -50	3.5319 / -60	-3.8185 / 60

L1-L2(trained / predefined)	bias21	neuron21	neuron22
neuron31	2.3328 / -50	-5.1739 / 60	5.5114 / 60