Information Mining - winter semester 2020

Exercise sheet 7

Exercise 1: Neural Networks

Draw a neural networks with the following details: 5 input features, two hidden layers where each layer contains 10 neuron and an output layer with 2 neurons.

Exercise 2: Neuron architecture

What happens within a single neuron? input multiply weight , sum , activation function ,output

Exercise 3: Activation functions

Mention 2 activation functions by name, give detailed formula and draw a plot presenting the output ranges. What is the motivation of using activation functions?

Introduce non-linearity to the network

Exercise 4: Cross entropy

Explain cross entropy (formula and example).

Hy(f)=-sigma yi*log(fi)

Exercise 5: Softmax

Motivate the use of softmax.

score ---softmax---> probability