Johnson Liu Notes on a perceptron review article 20 Sept 2019

Perceptrons are used to classify linearly separable data and falls under the category of supervised learning. Perceptrons are the basis for the more complicated neural network which contains multiple hidden layers instead of just an input layer like that of the perceptron's. Perceptrons cannot classify multiple classes within the data set. Neural networks are inspired by biological neurons and by how they interact with each other. In each of the layers in a neural network, the input to a layer is multiplied by weights and fed through an activation function. The result is fed into the next layer. Different activation functions have different output ranges. At the last non-hidden layer of a neural network, the final result is compared to the data set to compute an error associated with the particular set of weights used in the neural network. The neural network is trained by changing the weights to get smaller errors.

I did not know about the different activation functions. We only talked about multiplying the inputs by the weights in the perceptron, but we did not feed the result into an activation function. Different activation functions are used to produce different relationships between changes in the input and the changes in the output.

The article talks about backpropagation where the weights and biases are repeatedly adjusted to minimize the error in the results from a multilayer perceptron. The article did not go into detail about how the backpropagation algorithm works. I'm guessing it does something that moves from the error back to the inputs instead of feeding the inputs forward through the layers?