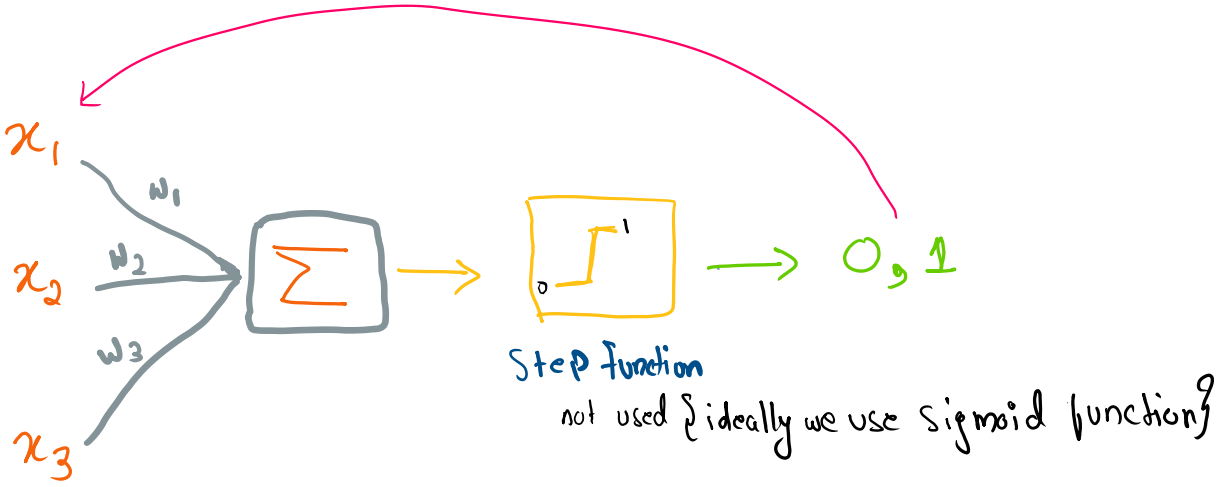
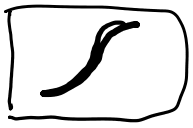
Neural Network Basics

07 May 2024 17:48



Step function

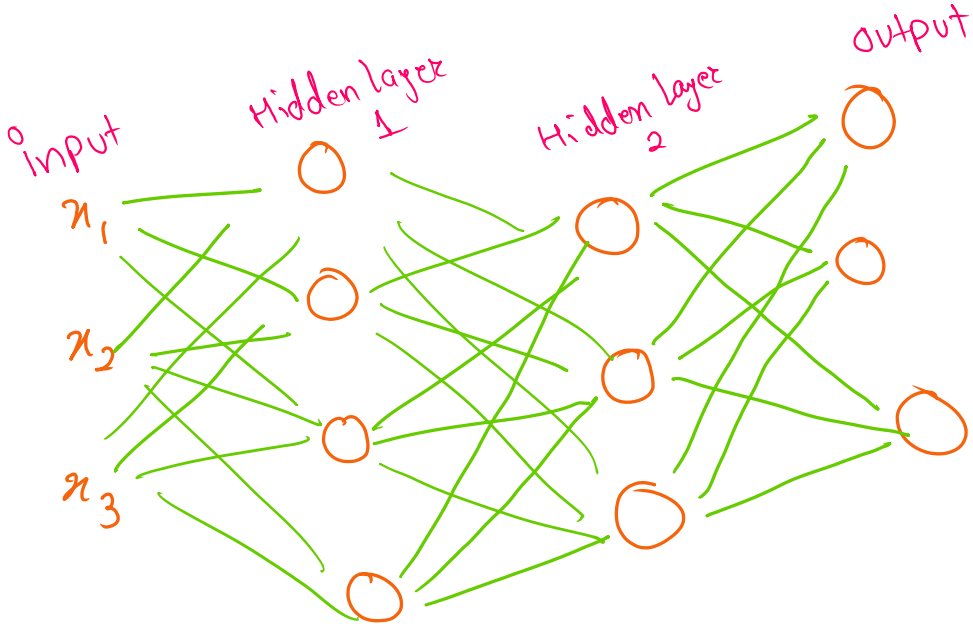
not used (ideally we use sigmoid function)



Activation function

$$y = f(\vec{x} \quad \vec{\omega})$$

output



→ mnist Dataset (fashion/ clothing)

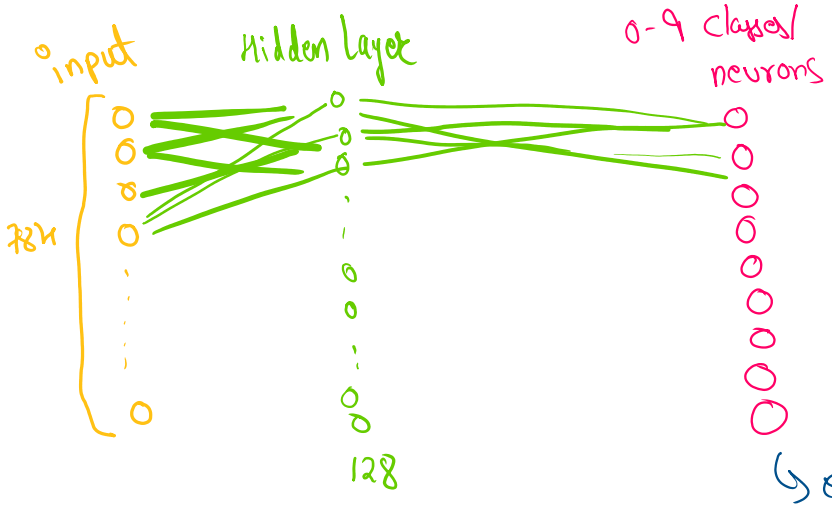
data is in a form of (28x28)

[[0.1, 0.2, ... x28],
.
.
x28
[.3, .4 ..... x28]]

this sort of data can't be used as it is to the neuron.

∴ we will flatten the data

(28x28) → [784]



↳ each class denotes a type of clothing appearal

In the case of a 28x28 grayscale image, there would be 28x28=784 neurons in the input layer. Each neuron would receive the pixel intensity value of a corresponding pixel in the image as its input.

Passing the entire image through a single neuron would lose spatial information and wouldn't effectively capture

For test_img with the highest %

Passing the entire image through a single neuron would lose spatial information and wouldn't effectively capture the complex patterns present in the image. Instead, neural networks use multiple layers of neurons, each layer learning different features of the input data, to extract relevant information and make predictions.

For testing with the highest % with some particular class is likely the clothing.