## horizontal line

MLP Notation(class6)

10.01.2025

**─**

# MLP Notation

It is a 4 input column dataset. It means we use a 4D classifier i.e. it’s a plane .

4 3 2 1



As all mentioned in the diagram , Xi1 , Xi2 - - - Xi4 , i is the row number.

We have different notations here.

## Bias :

i is the current layer and j is the current node.

## Output :

i is the current layer and j is the current node (same as of b).

## Weights :

k is the layer in which it is entering , i is the node from which it is coming , j is the node where it is going on .

First we need to calculate how many trainable parameters i.e. weights and biases.

For layer 1 = 4\*3 = 12 weights + 3 biases

For layer2 = 3\*2 = 6 weights + 2 biases

For layer3 = 2\*1 = 2 weights + 1 bias

So there are intotal 26 trainable parameters. Means the backpropagation algorithm tries to find out values of 26 parameters .

For layer0 , For layer1 For layer2

Xi1 = , , , ,

Xi2 = , , ,

Xi3 = , , ,

Xi4 = , ,