

Neural Nets are crazy cool

**Some fancy subtitle
in 2 lines maybe**

Jean Dupont and Jeannet Dupont

Supervised by **Prof.1** and **Prof.2**



An artificial neuron !

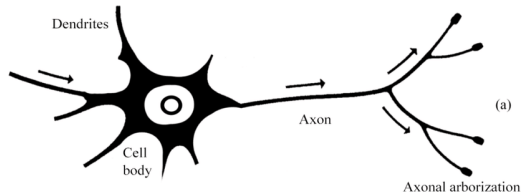
Other aspects of the template

An artificial neuron !

The McCulloch-Pitts Model



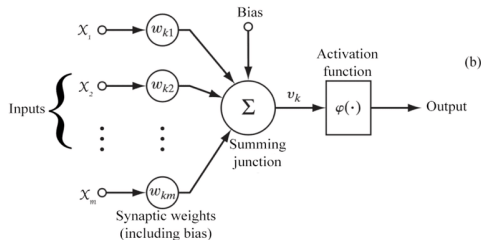
- This is the first point
 - This is a second hierarchy point
- Here's the second point
- And a third point



The equation of a Neural Network

The equation governing neuron k is :

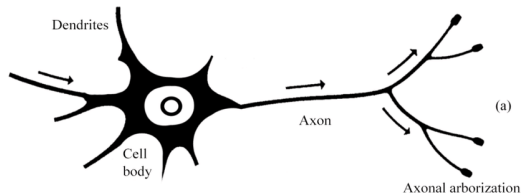
$$\text{Output}_k = \varphi\left(\sum_1^m x_i w_{ki} + \text{Bias}\right)$$



The McCulloch-Pitts Model



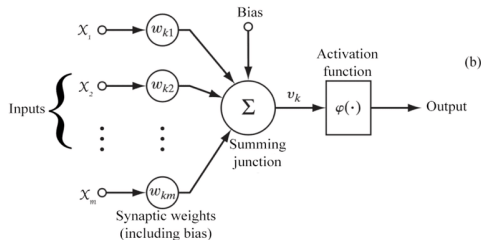
- This is the first point
 - This is a second hierarchy point
- Here's the second point
- And a third point



The equation of a Neural Network

The equation governing neuron k is :

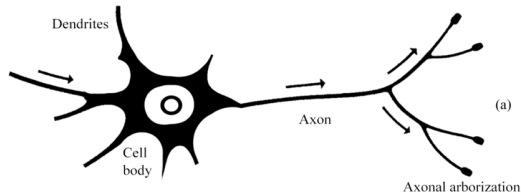
$$\text{Output}_k = \varphi\left(\sum_1^m x_i w_{ki} + \text{Bias}\right)$$



The McCulloch-Pitts Model



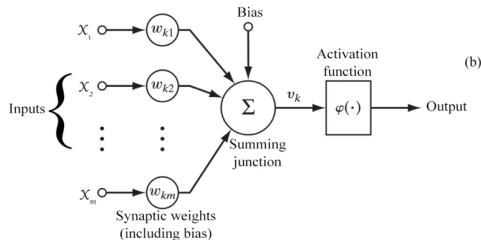
- This is the first point
 - This is a second hierarchy point
- Here's the second point
- And a third point



The equation of a Neural Network

The equation governing neuron k is :

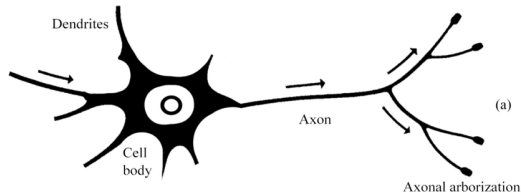
$$\text{Output}_k = \varphi\left(\sum_1^m x_i w_{ki} + \text{Bias}\right)$$



The McCulloch-Pitts Model



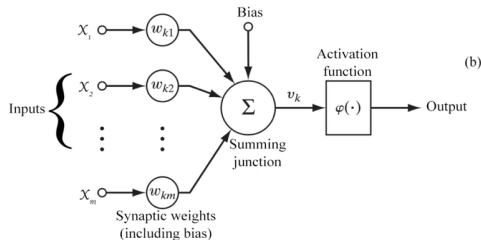
- This is the first point
 - This is a second hierarchy point
- Here's the second point
- And a third point



The equation of a Neural Network

The equation governing neuron k is :

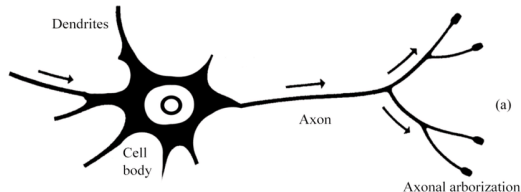
$$\text{Output}_k = \varphi\left(\sum_1^m x_i w_{ki} + \text{Bias}\right)$$



The McCulloch-Pitts Model



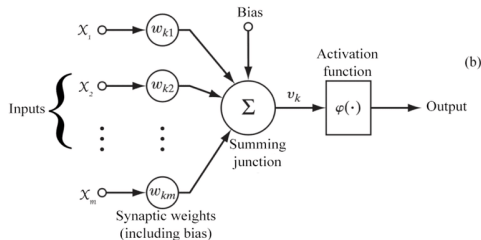
- This is the first point
 - This is a second hierarchy point
- Here's the second point
- And a third point



The equation of a Neural Network

The equation governing neuron k is :

$$\text{Output}_k = \varphi\left(\sum_1^m x_i w_{ki} + \text{Bias}\right)$$





Algorithm 1 Hyper symple Backprop

For a sample (x_n, y_n^*) , propagate the input x_n through the network to compute the outputs $(v_{i_1}, \dots, v_{i_{|V|}})$ (in topological order).

Compute the loss $\mathcal{L}_n := \mathcal{L}(v_{i_{|V|}}, y_n^*)$ and its gradient.

$$\frac{\partial \mathcal{L}_n}{\partial v_{i_{|V|}}}.$$
(1)

for $j \in |V|, \dots, 1$ **do**

$$\frac{\partial \mathcal{L}_n}{\partial w_j} = \frac{\partial \mathcal{L}_n}{\partial v_{i_{|V|}}} \prod_{k=j+1}^{|V|} \frac{\partial v_{i_k}}{\partial v_{i_{k-1}}} \frac{\partial v_{i_j}}{\partial w_j}.$$
(2)

where w_j refers to the weights in node i_j .

end for

Other aspects of the template



This is a Block

This is the primary colour



This is a Block

This is the primary colour

This is an Example Block

This is derived from the primary colour



This is a Block

This is the primary colour

This is an Example Block

This is derived from the primary colour

This is an Alert Block

This is also derived from the primary colour