

Neuron Sandbox Student Worksheet 2

<https://www.cs.cmu.edu/~dst/NeuronSandbox>

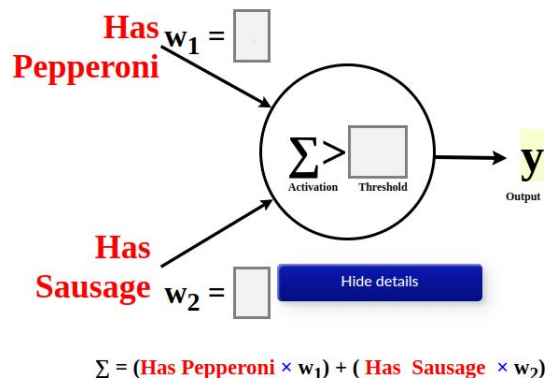
Does this pizza have meat? It has meat if its toppings include either pepperoni or sausage (or both).. Let's work through the steps to make a neuron answer this question.

1. There are four cases to consider, depending on whether the pizza has pepperoni, sausage, neither, or both. Fill in the four rows of the Inputs table with 0 and 1 to lay out the four cases.
2. The Desired Output is the correct answer for each case. The pizza has meat if it includes either of the two meat toppings. Fill in the Desired Output column with the correct 0 and 1 values.
3. Decide on weight and threshold values that will get the neuron to solve the problem. In the neuron diagram at the center of the figure, fill in values for weights w_1 and w_2 and the threshold.
4. Using the weights you selected, compute the activation value for each of the four cases and write it in the Activation column.
5. Compare the activation with the threshold. If the value in the Activation column is greater than the threshold you selected, put a 1 in the Current Output column. Otherwise put a 0 there. Do this for all four cases.
6. If the current Output matches the Desired Output for all four cases, your solution is correct.

Does This Pizza Have Meat?

If it includes either pepperoni or sausage, then it has meat.

Inputs	
Has Pepperoni	Has Sausage



Outputs		
Activation Σ	Current Output $\Sigma >$	Desired Output