# Neural Network
## TF4063

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## 1 Percetor learning algorithm

- Initialization: set all of the weights $w_{ij}$ to small (positive and negative) random numbers.

- Training loop: for $N_{it}$ iterations or until all of the outputs are correct

  - for eacth input vector: compute the activation of each neuron $j$ using activation function $g$:

$$y_i = g\left(\sum_{i=0}^{m} w_{ij}x_i\right) = \begin{cases} 1 & \text{if } \sum_{i=0}^{m} w_{ij}x_i > 0 \\ 0 & \text{if } \sum_{i=0}^{m} w_{ij}x_i \leq 0 \end{cases} \tag{1}$$