nlp4kor

https://github.com/bage79/nlp4kor

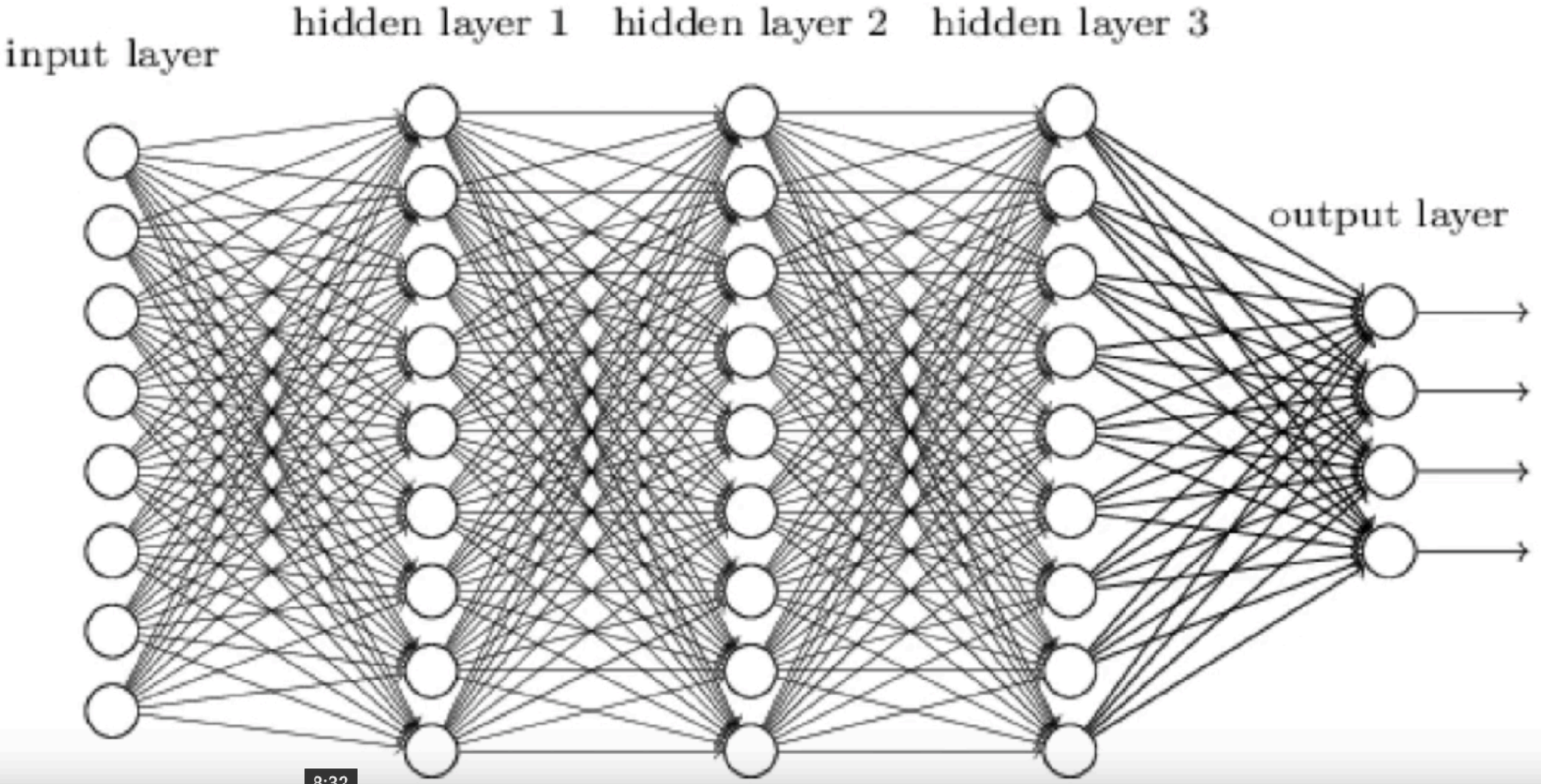
https://facebook.com/nlp4kor

왕초보를 위한 NN

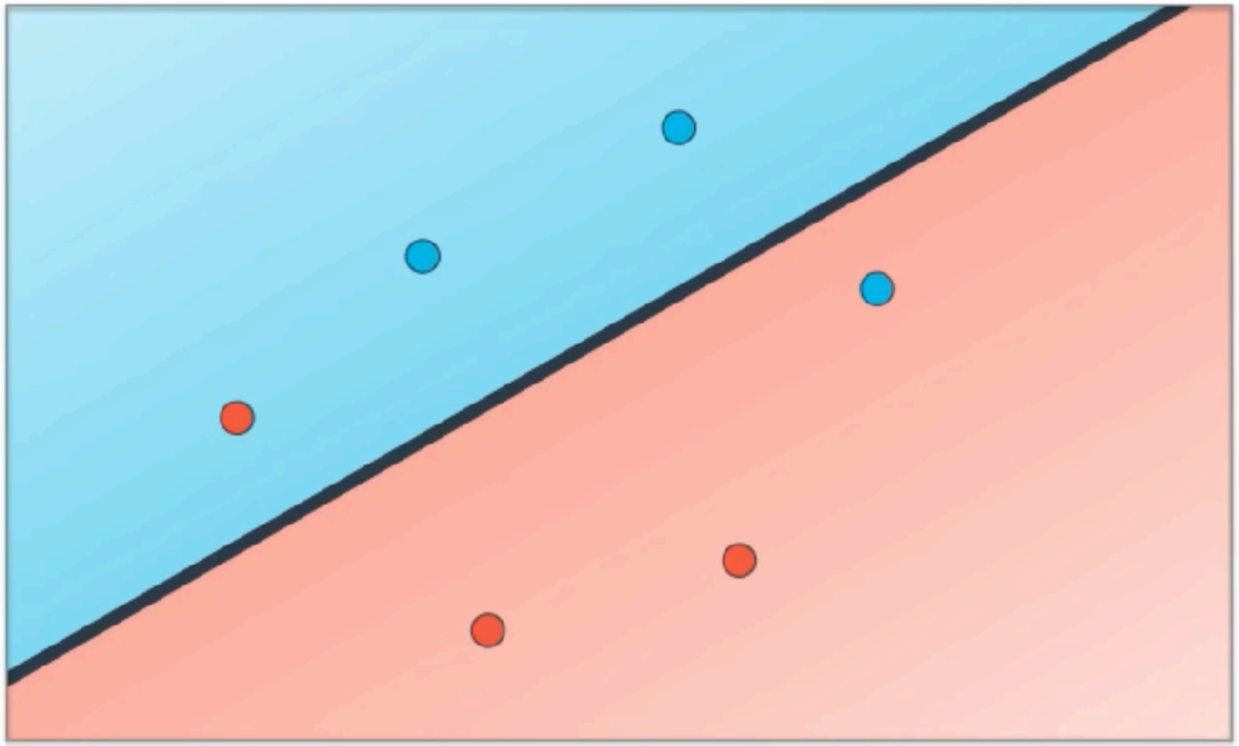
Luis Serrano

https://youtu.be/BR9h47Jtqyw

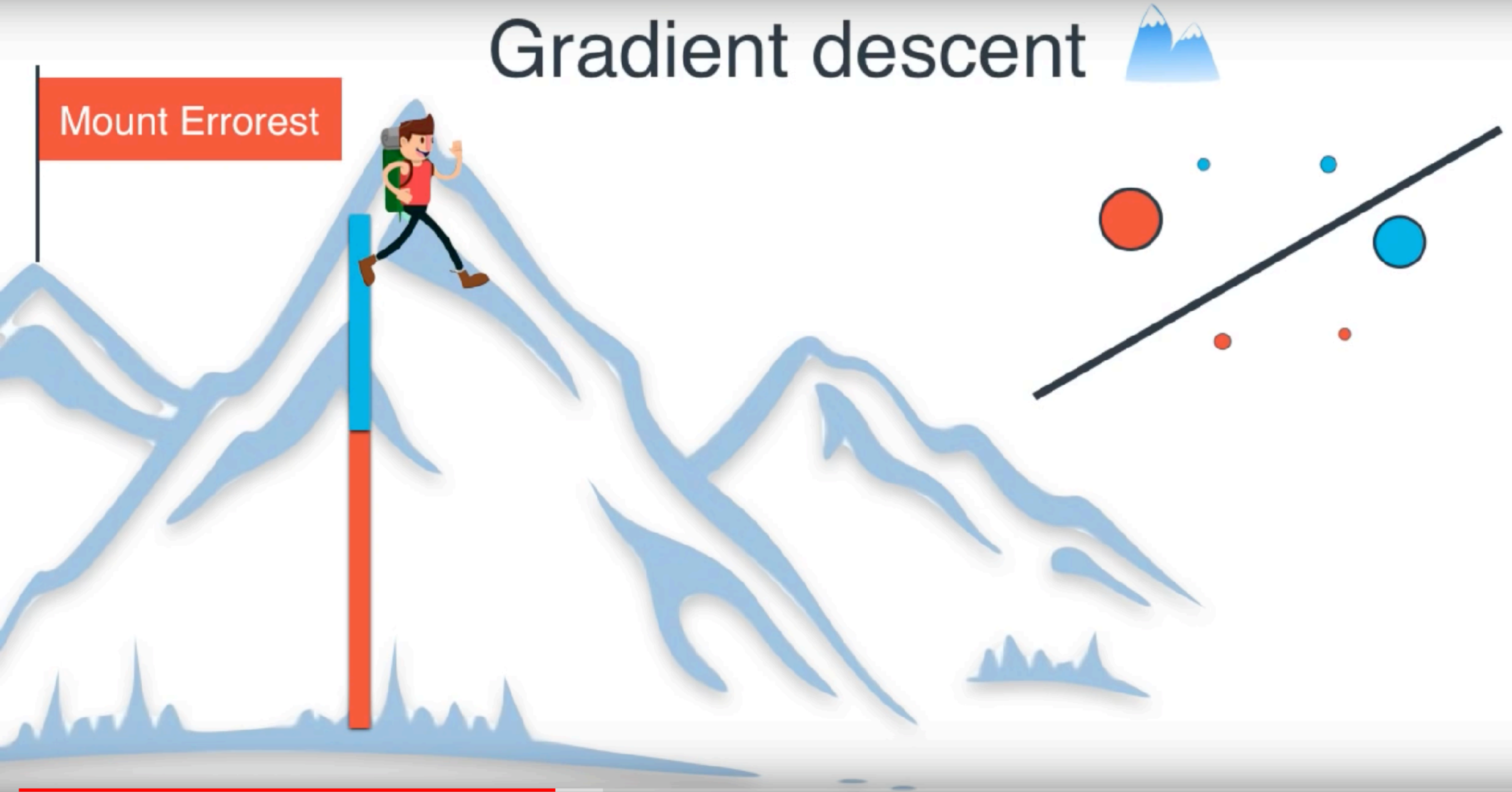
Neural Networks



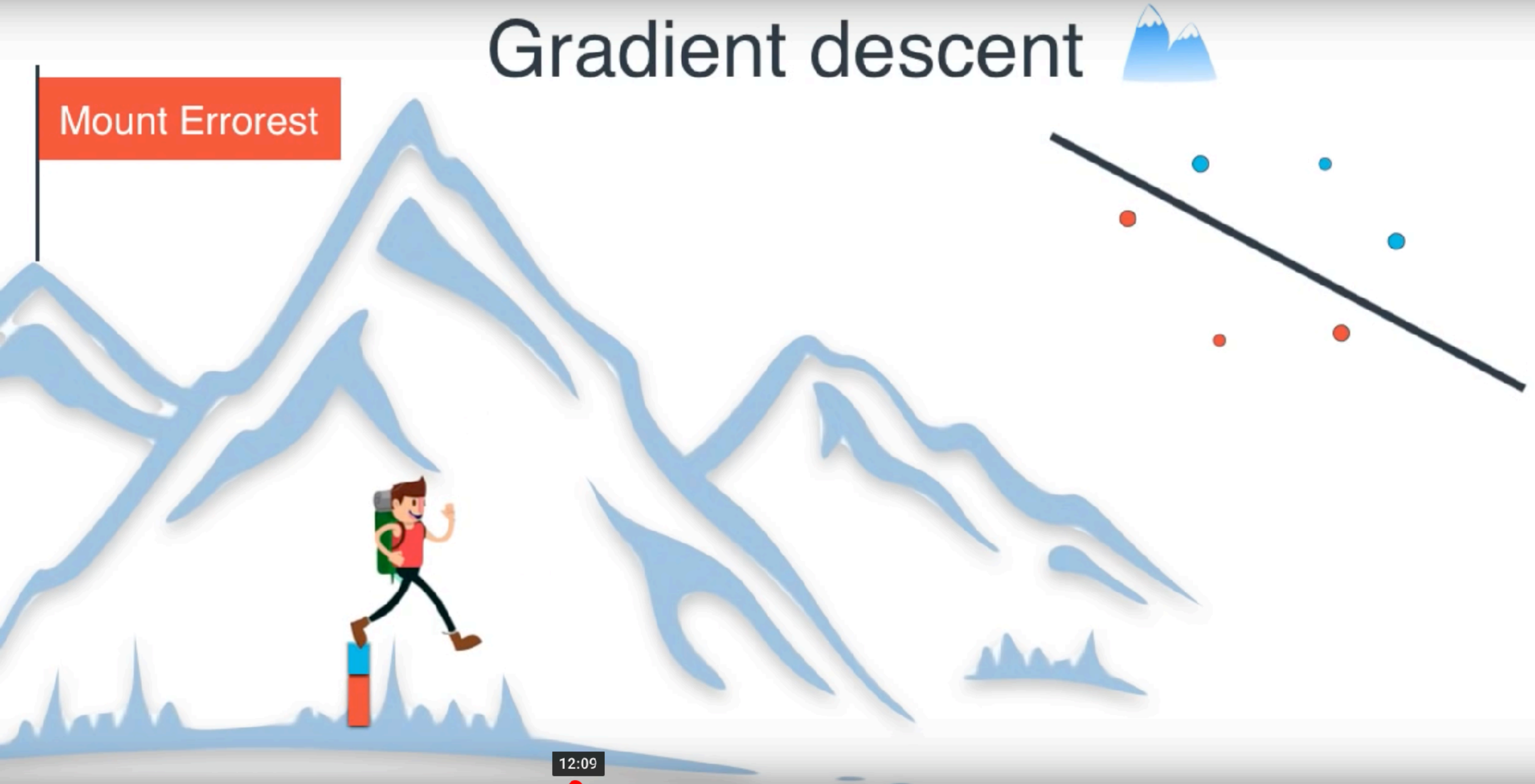
Goal: Split Data



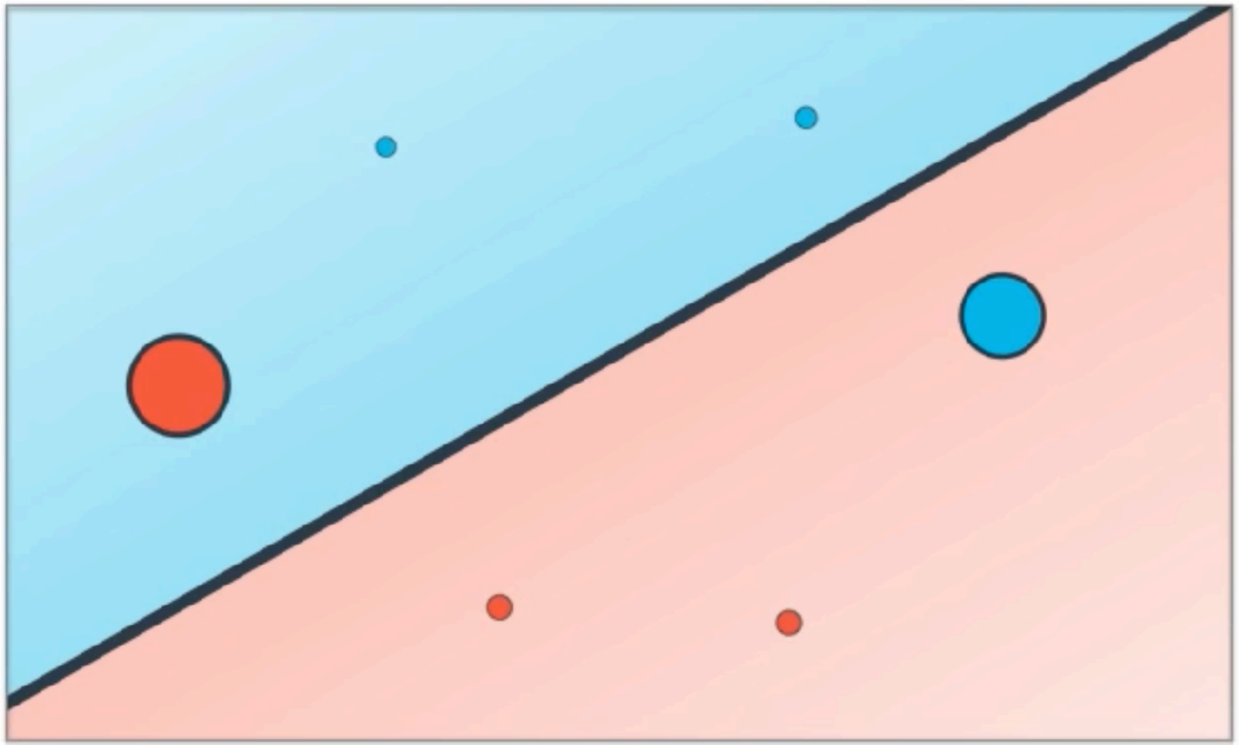
Gradient descent



Gradient descent

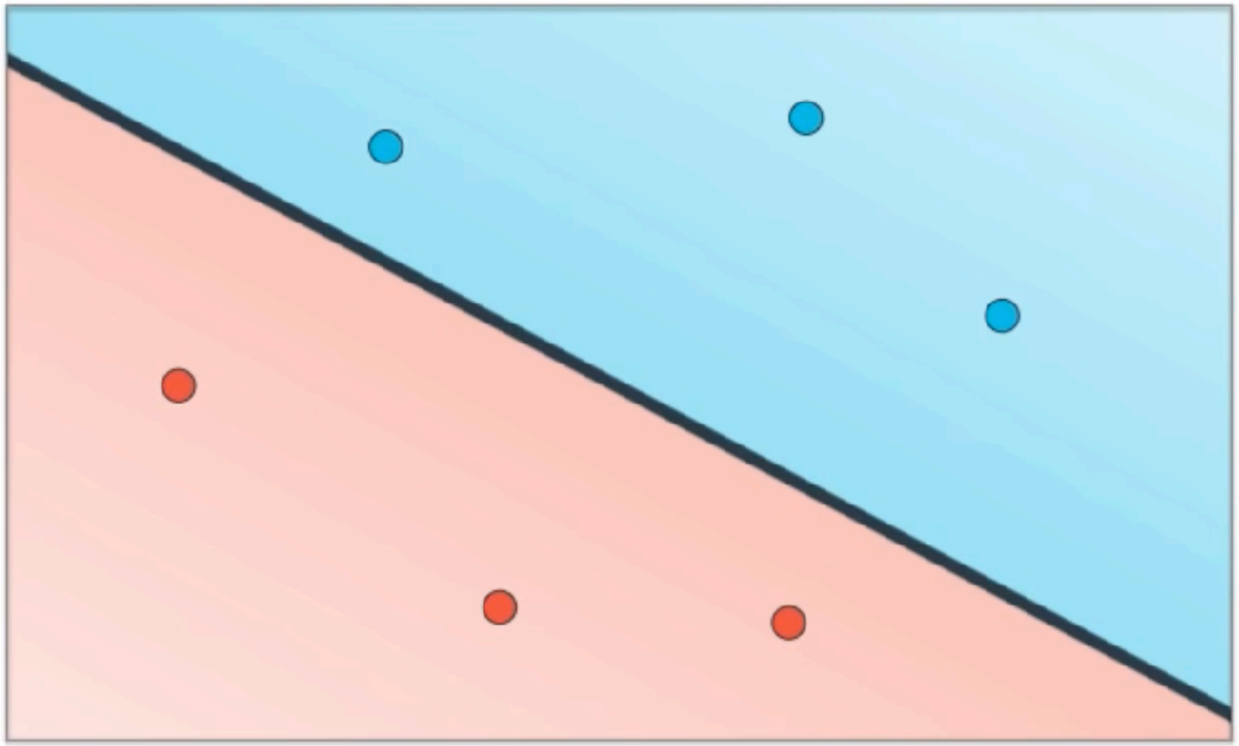


Logistic Regression



Error = • + • + ● + ● + • + •

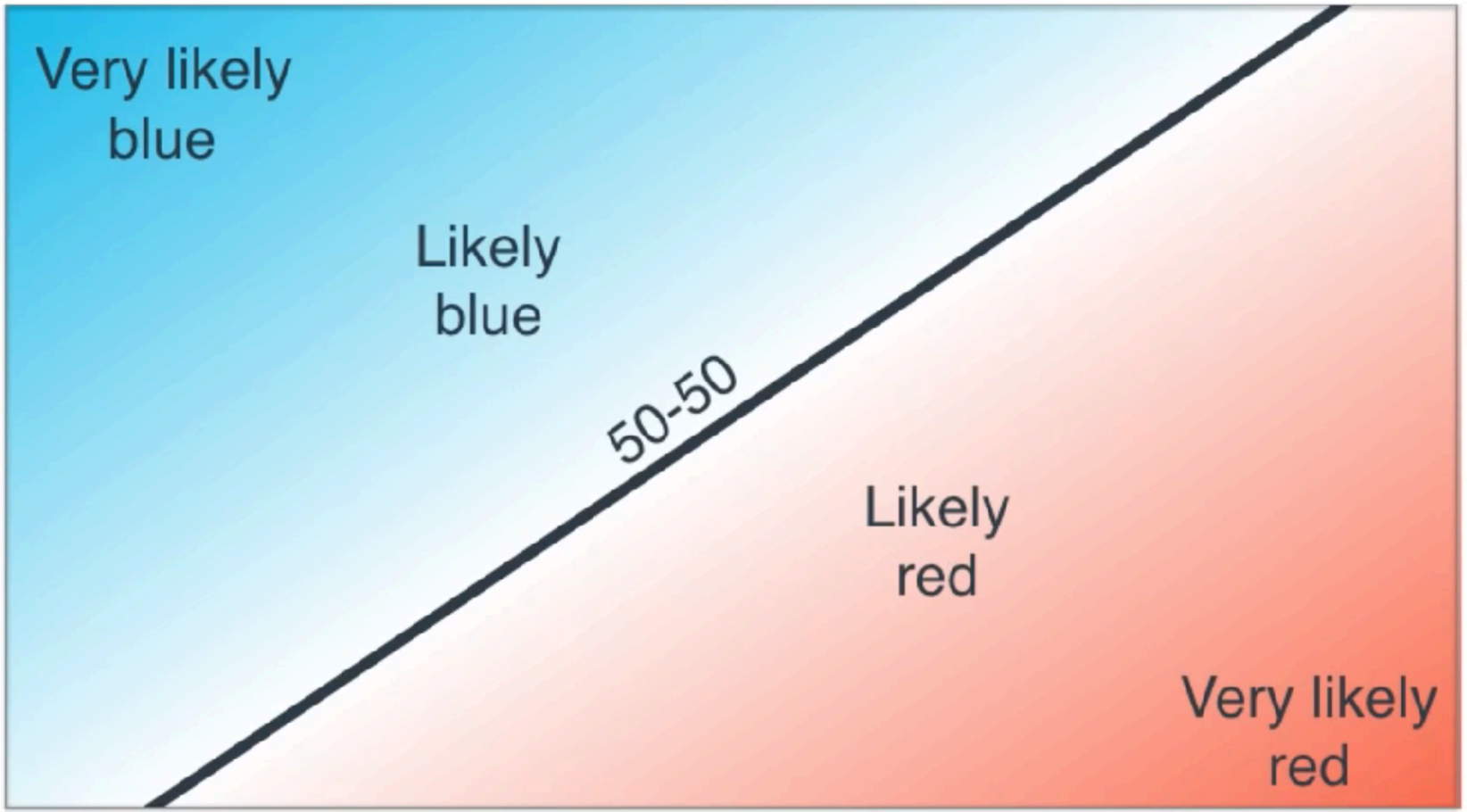
Logistic Regression



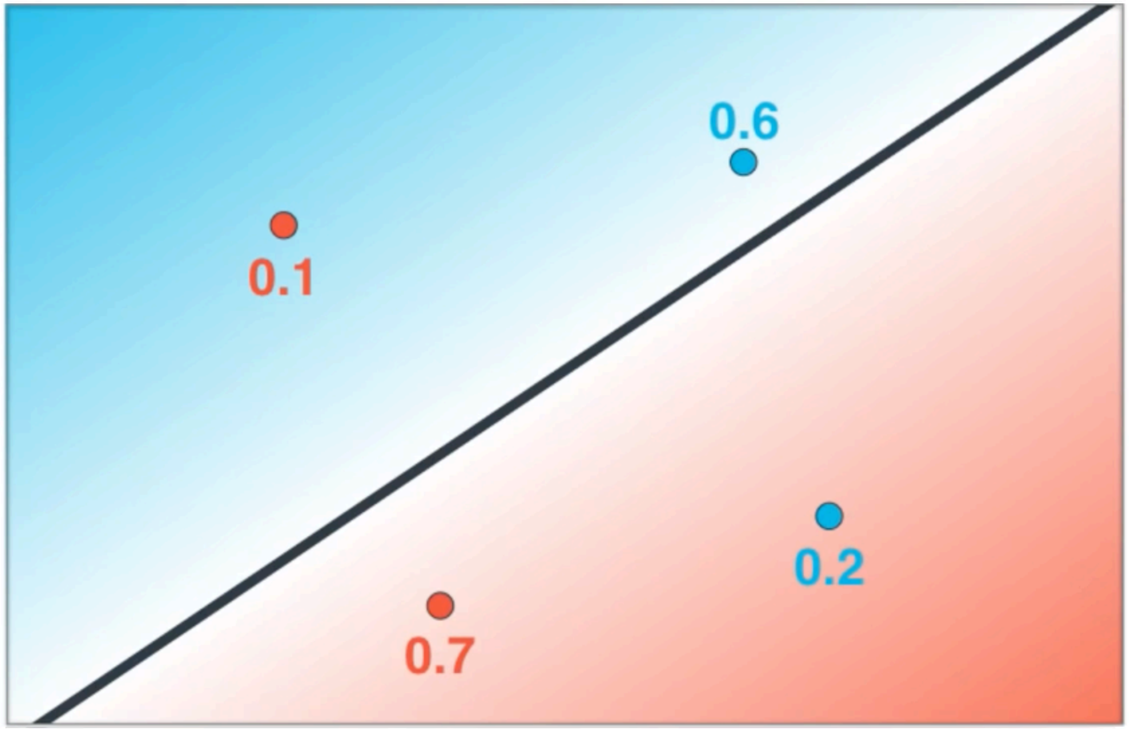
Error = ● + ● + ● + ● + ● + ●

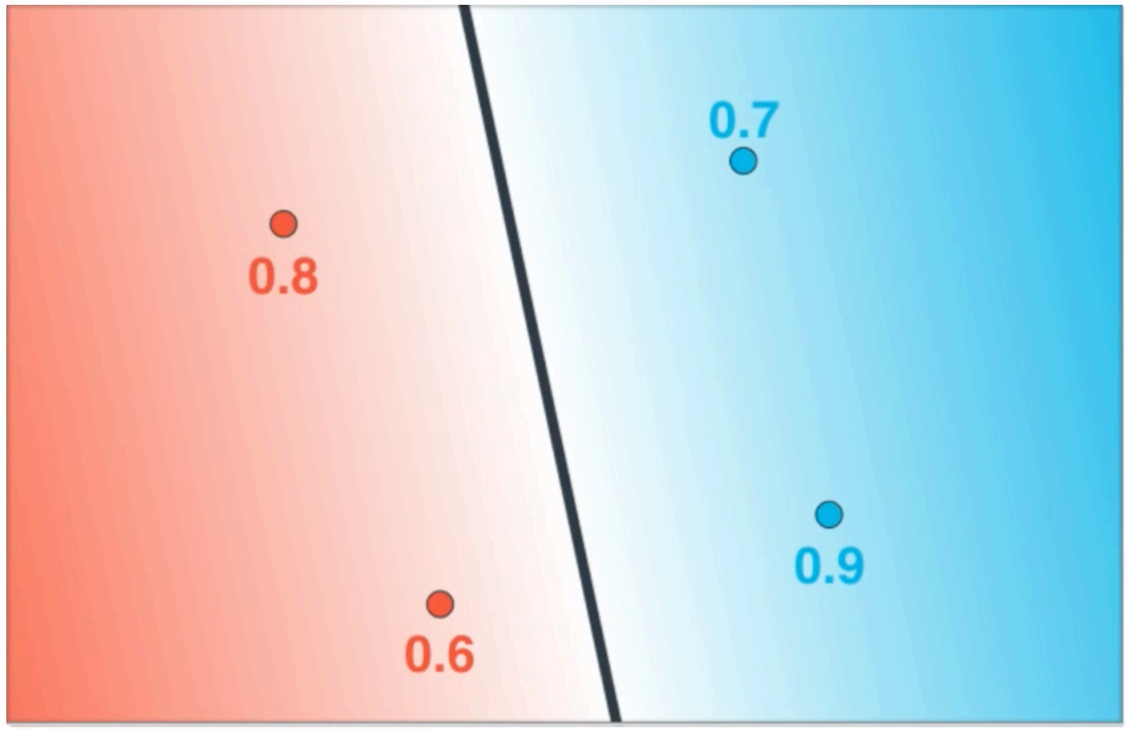
Minimize error

Probability



Error function

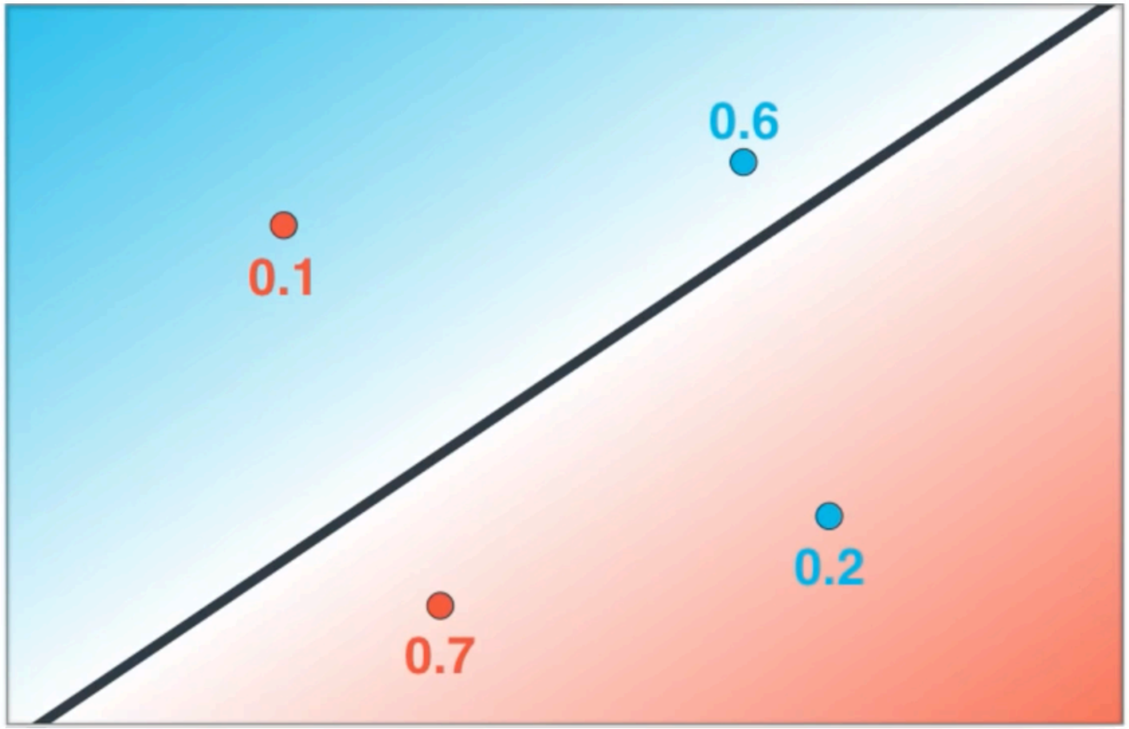




0.6*0.2*0.1*0.7 = 0.0084

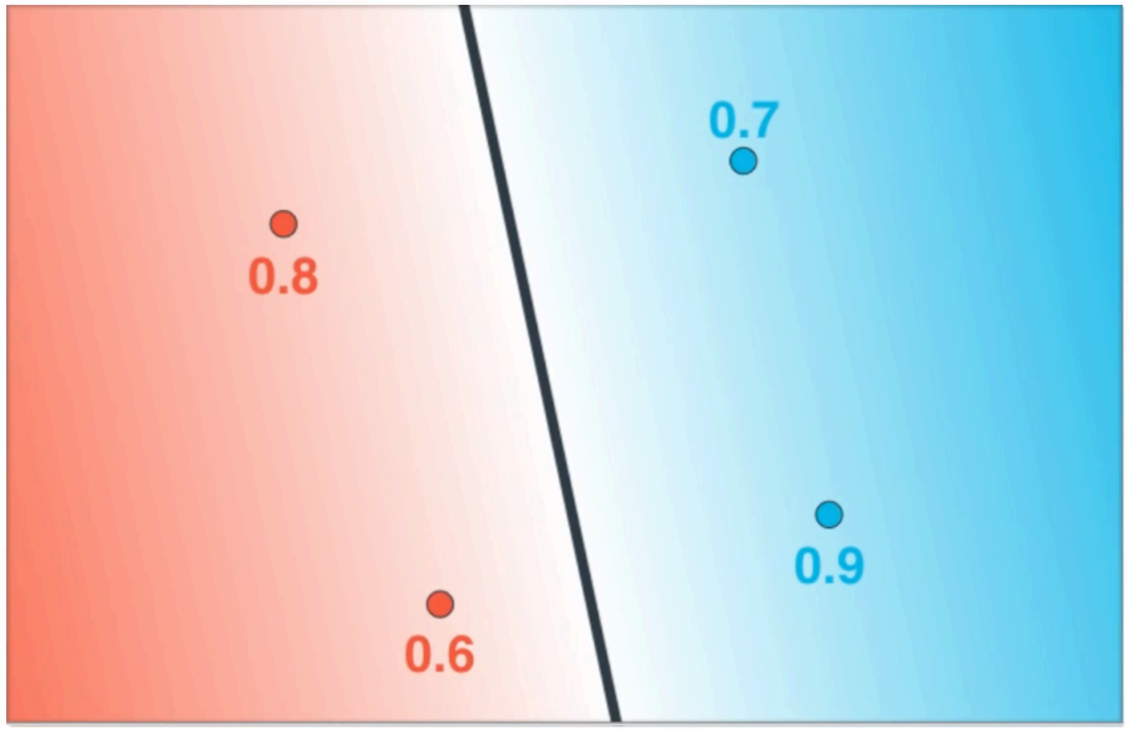
0.7*0.9*0.8*0.6 = 0.3024

Error function



0.6*0.2*0.1*0.7 = 0.0084

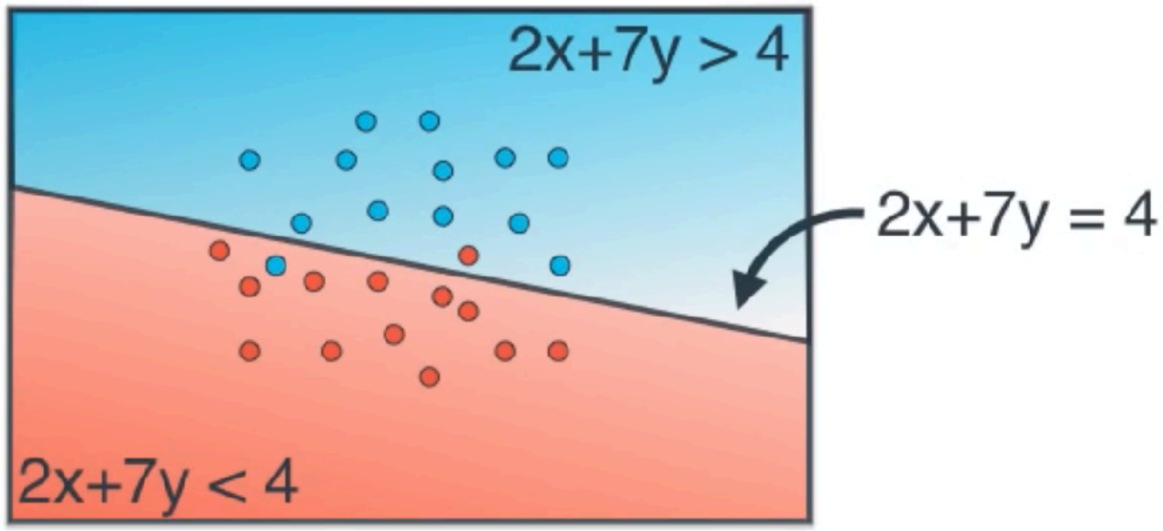
-log(0.6) - log(0.2) - log(0.1) - log(0.7) = 4.8



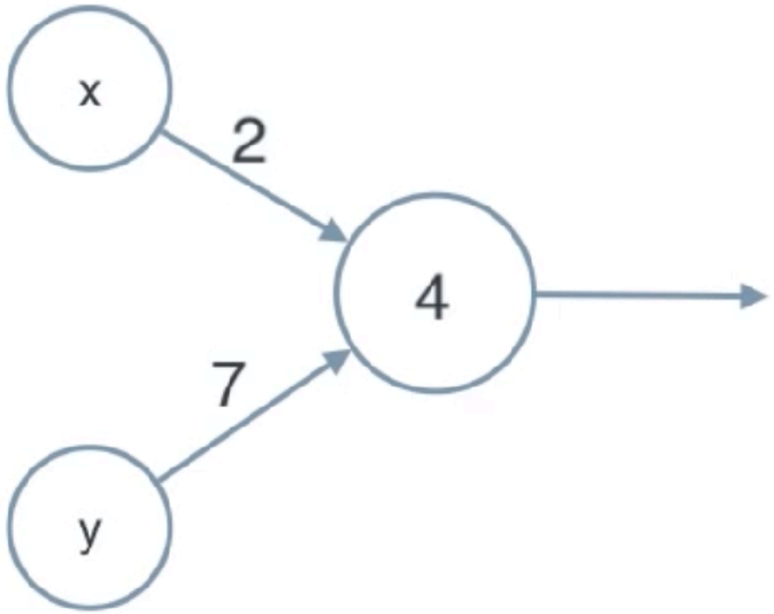
0.7*0.9*0.8*0.6 = 0.3024

-log(0.7) - log(0.9) - log(0.8) - log(0.6) = 1.2

Neuron

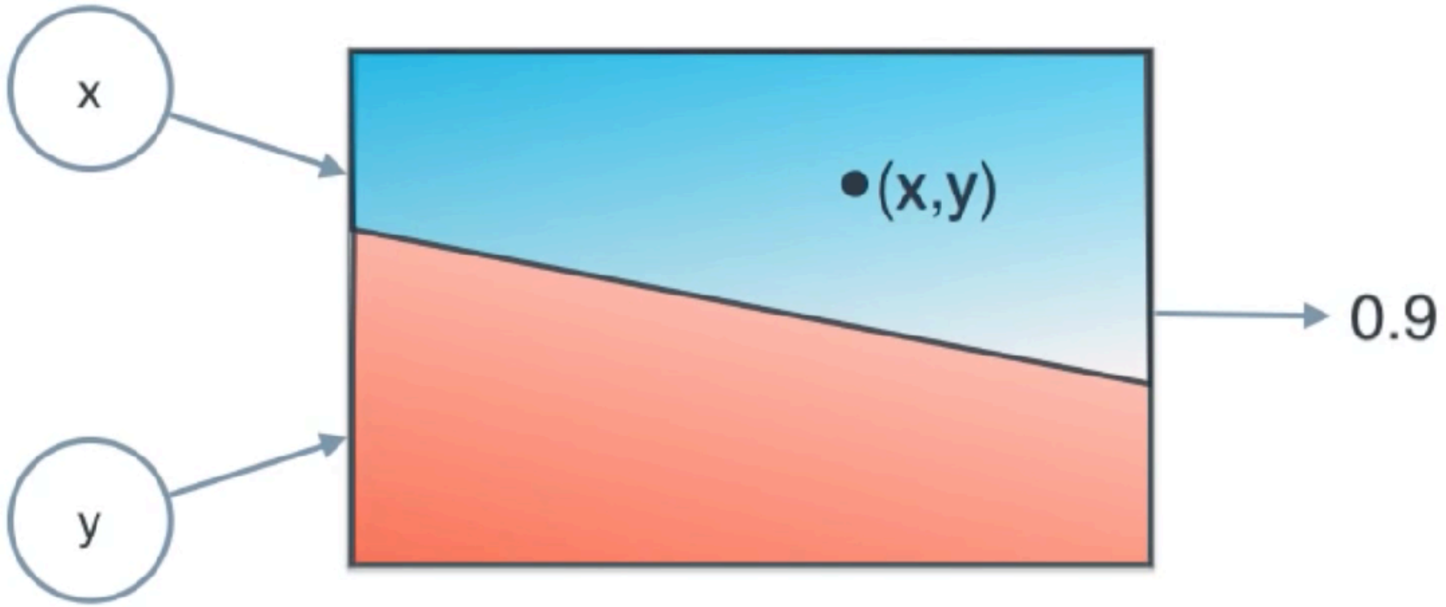


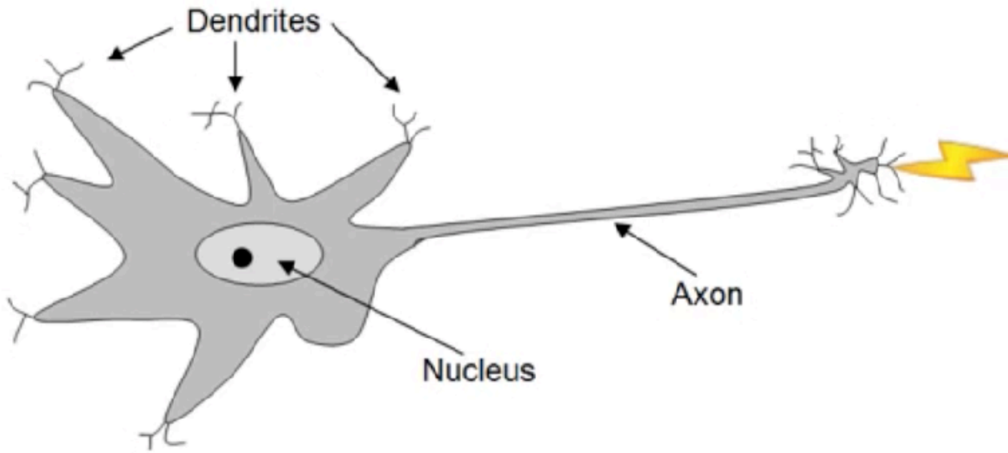
2x+7y-4 = 0



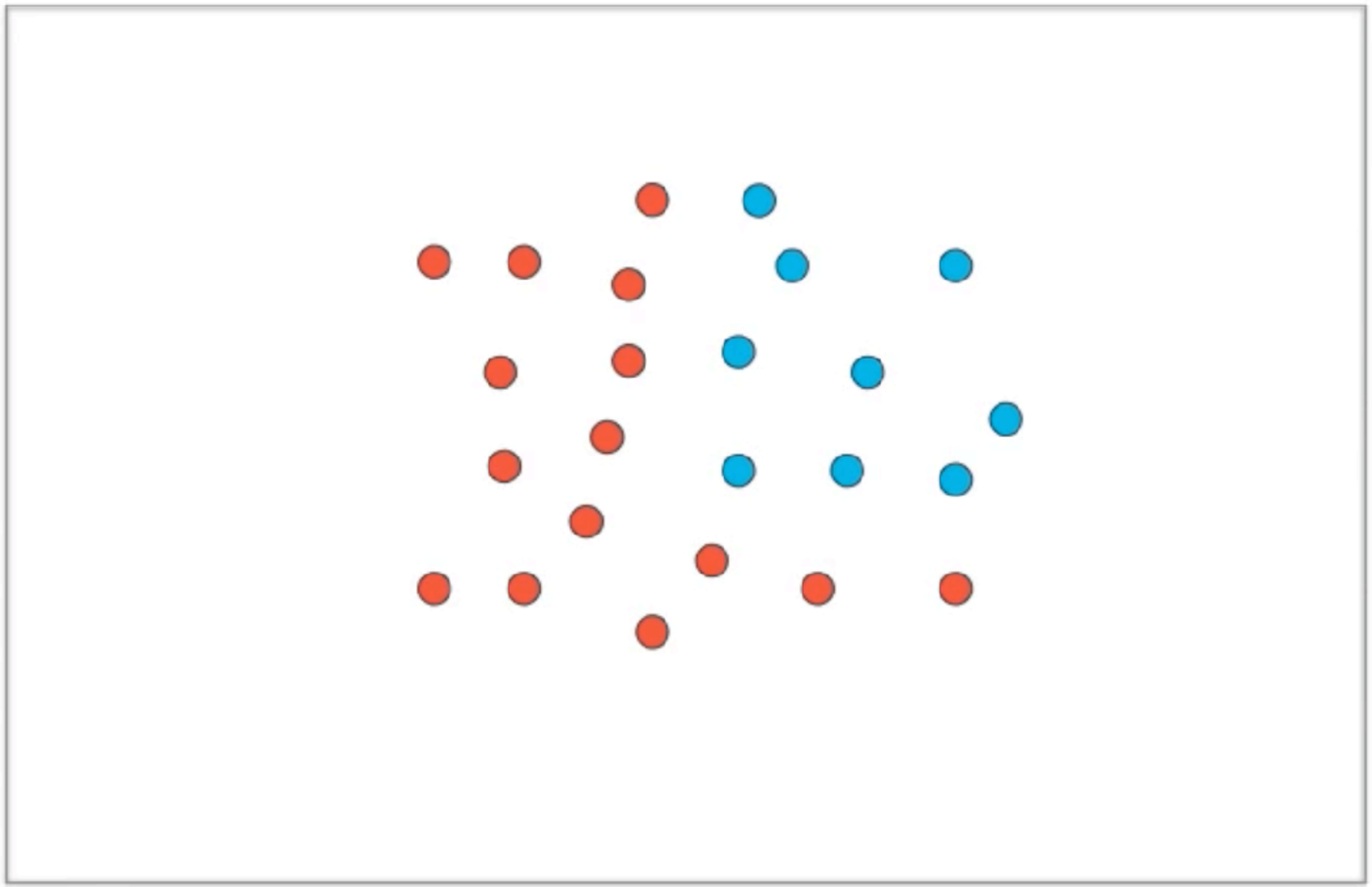
	probability	predict
2x+7y-4 = 4	0.9	blue
2x+7y-4 = -4	0.1	red

Neuron

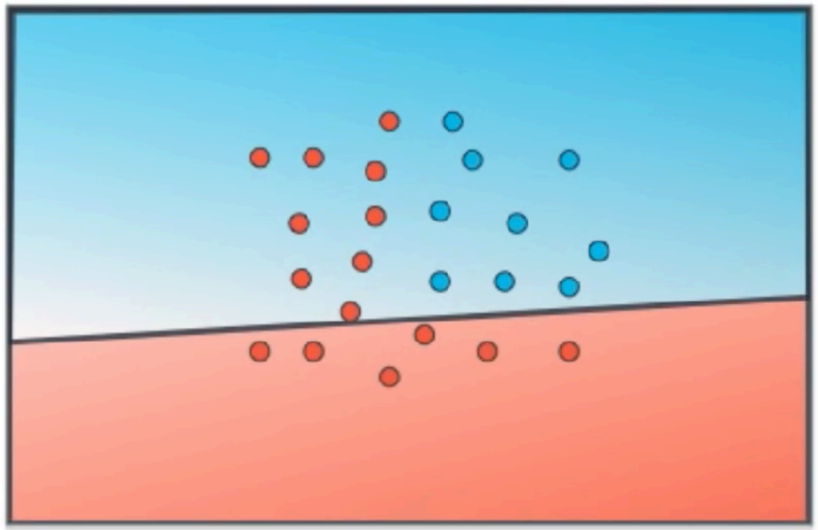


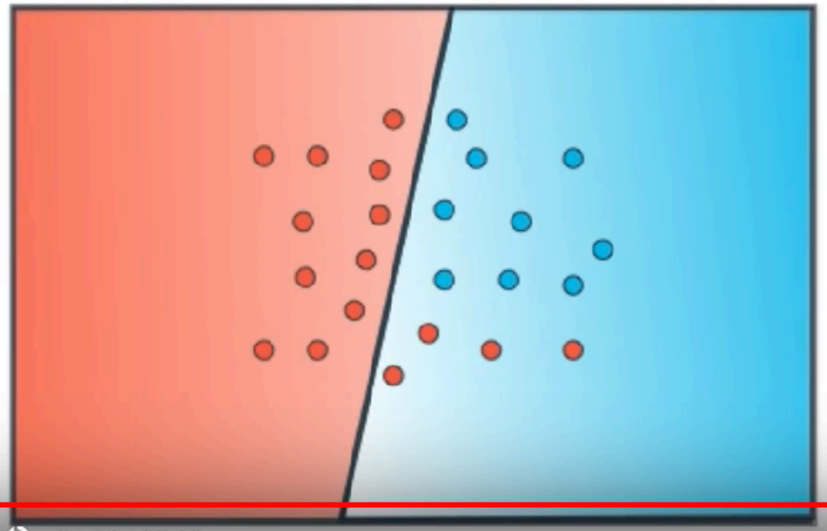


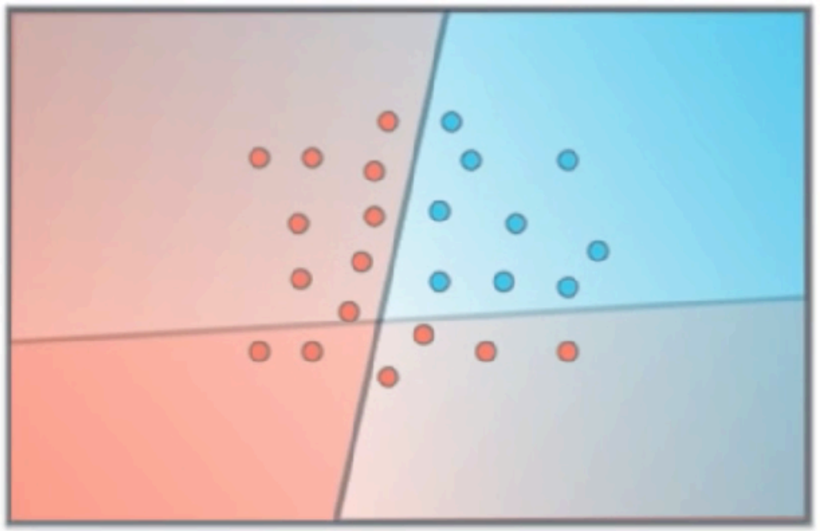
Non-linear regions



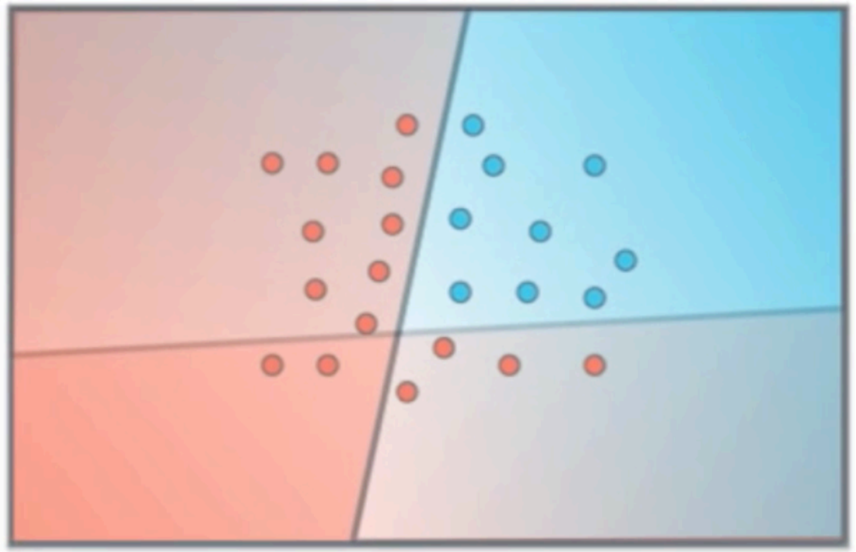
Combining Regions

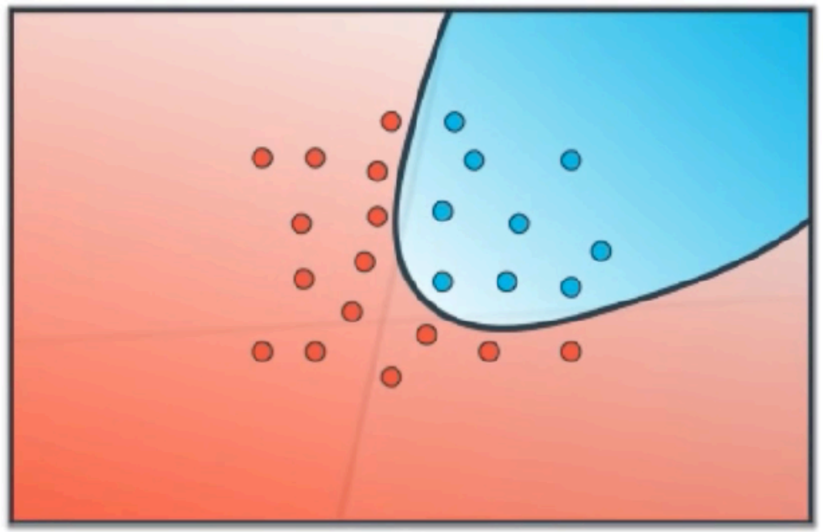




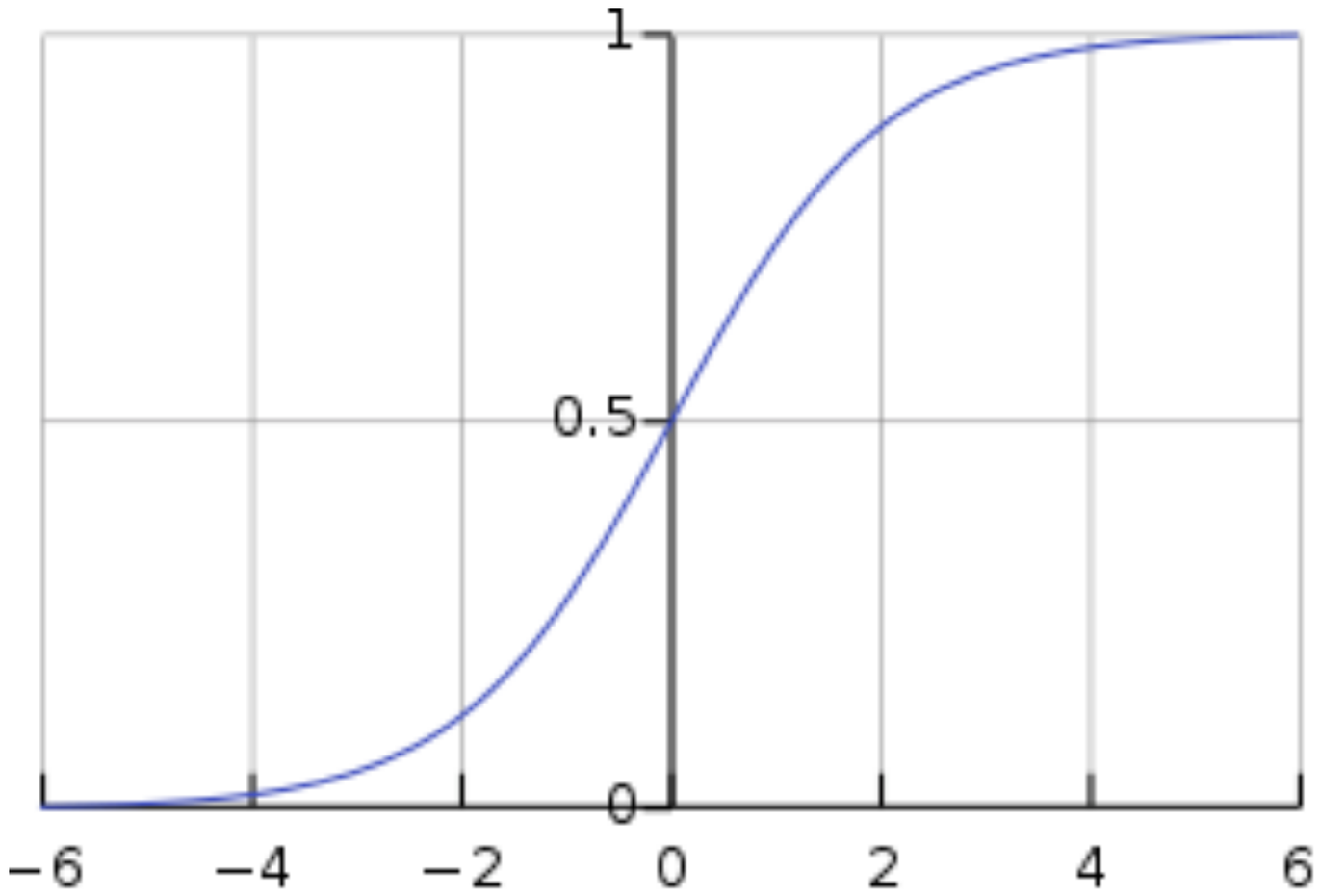


Combining Regions





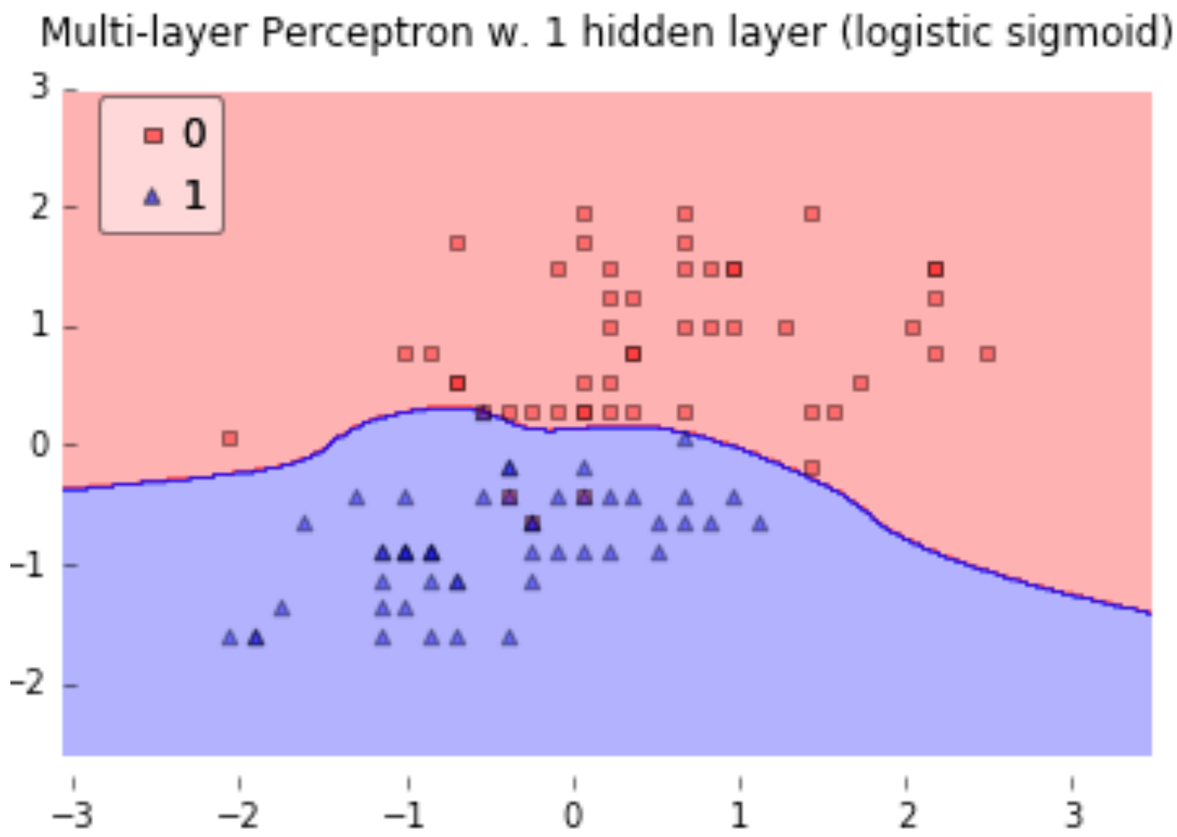
Activation function



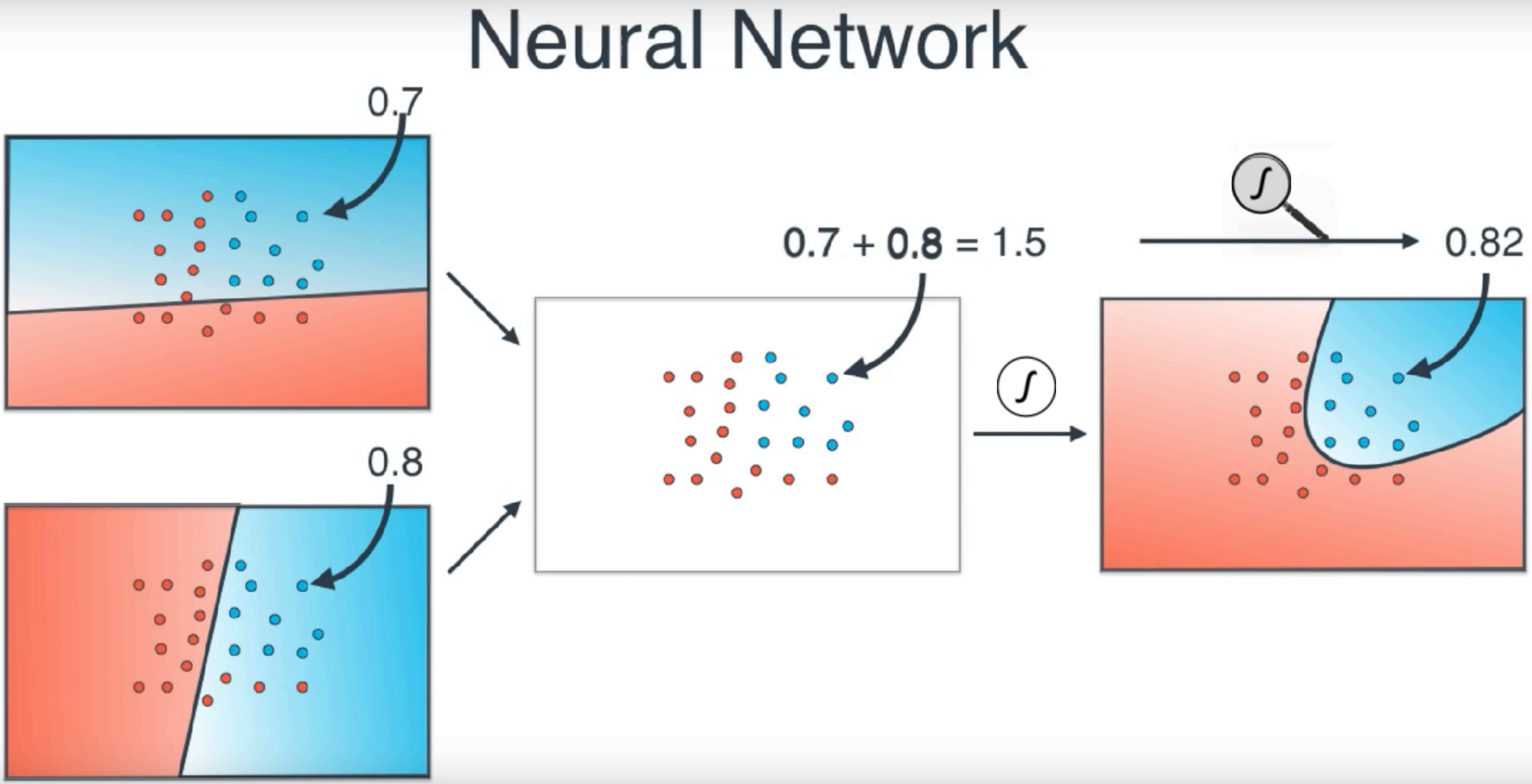
$$S(x) = \frac{1}{1 + e^{-x}} = \frac{e^x}{e^x + 1}$$

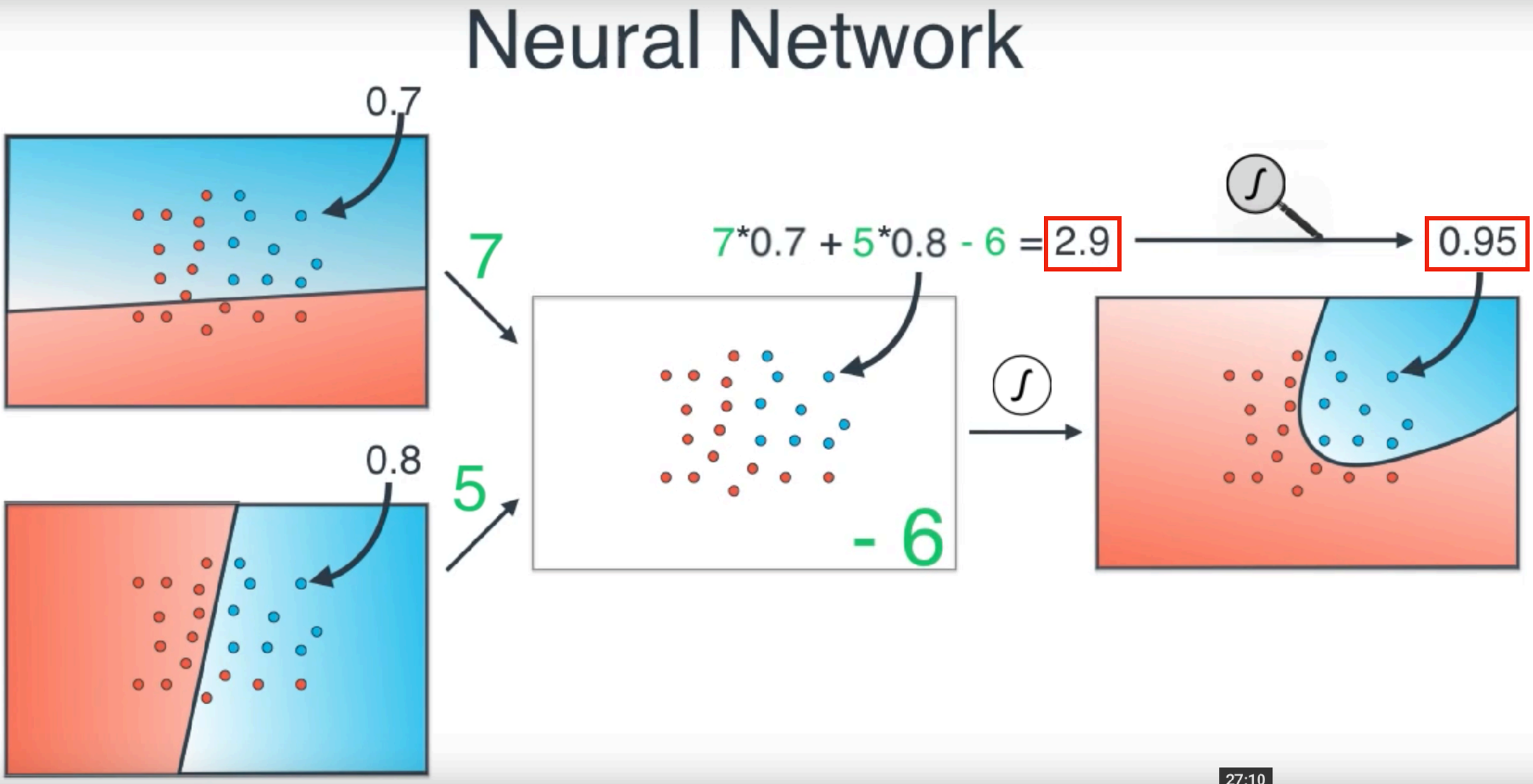
https://en.wikipedia.org/wiki/Sigmoid_function

Activation function

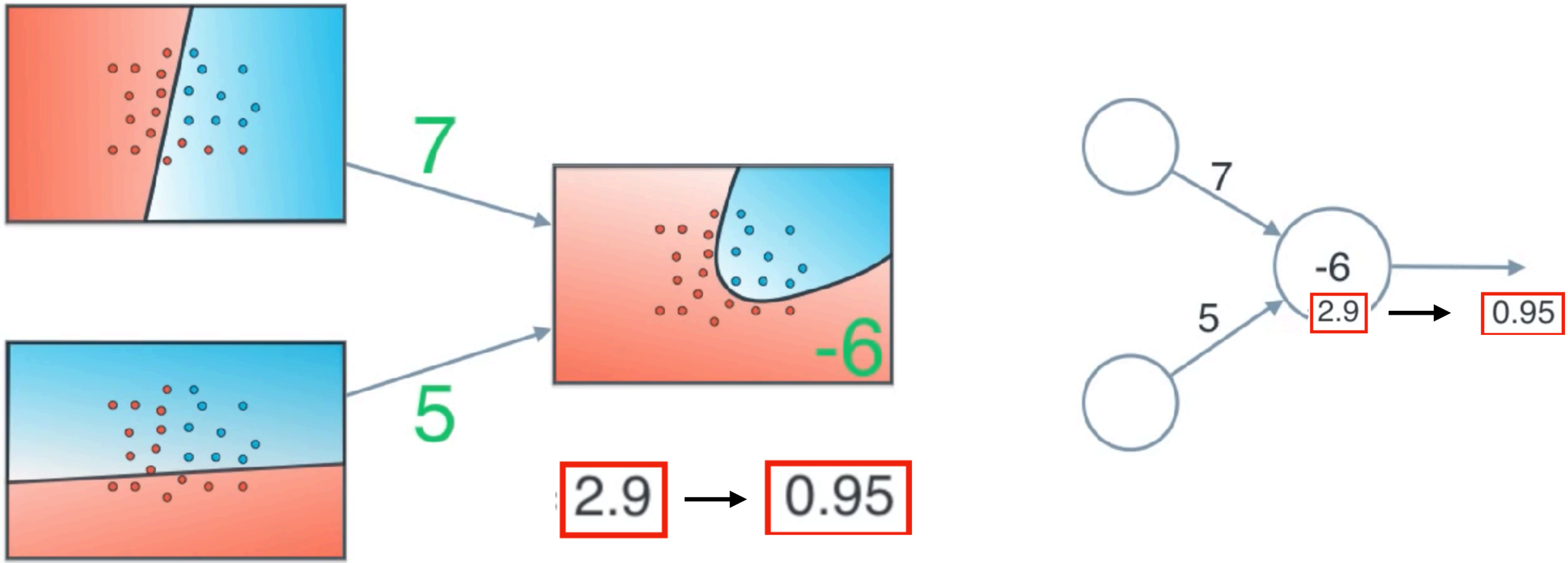


https://www.quora.com/What-is-the-role-of-the-activation-function-in-a-neural-network-How-does-this-function-in-a-human-neural-network-system/answer/Sebastian-Raschka-1?srid=5REb

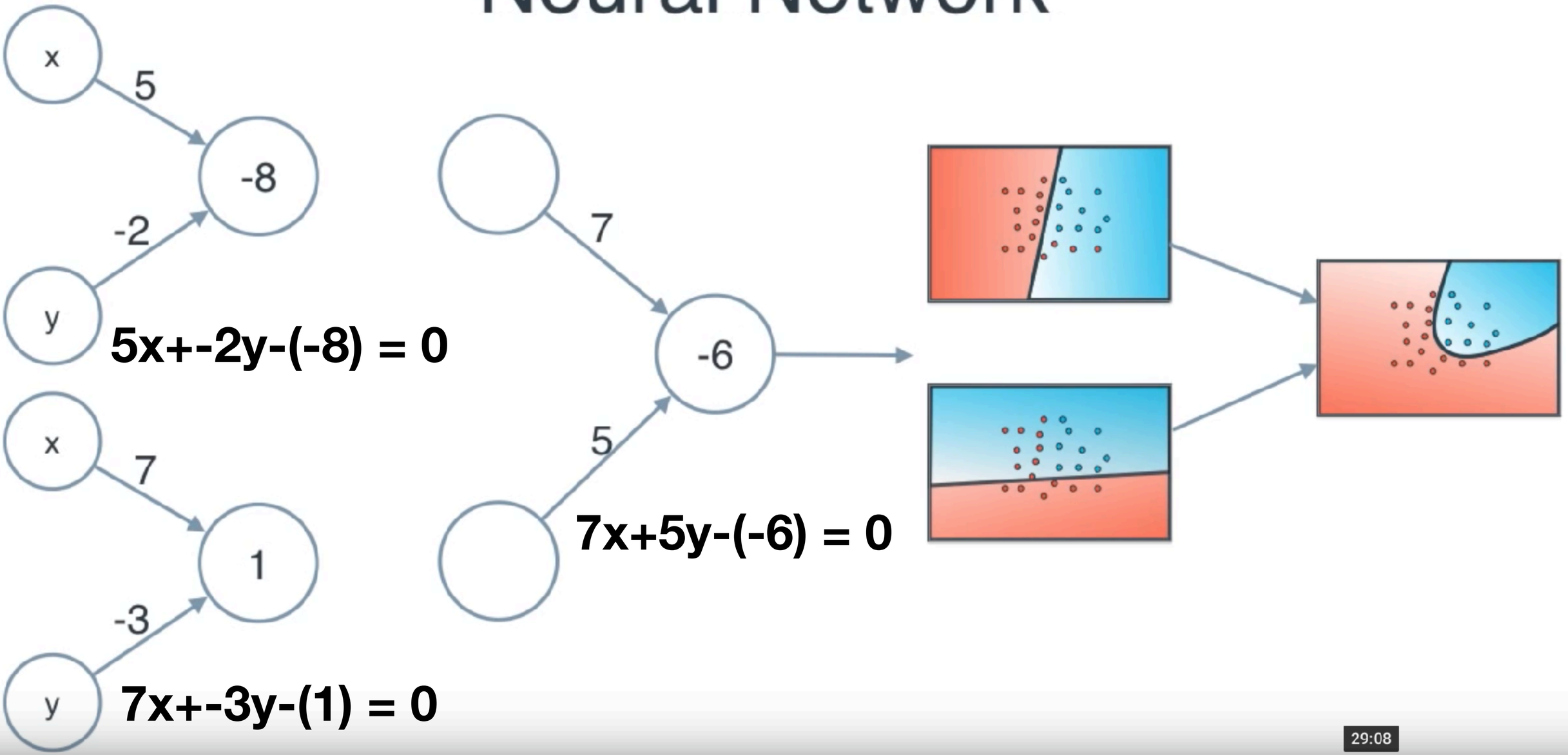

Neural Network
0.7
0.8
0.7 + 0.8 = 1.5
∫
∫
0.82


Neural Network
0.7
0.8
7
5
- 6
7*0.7 + 5*0.8 - 6 = 2.9
0.95

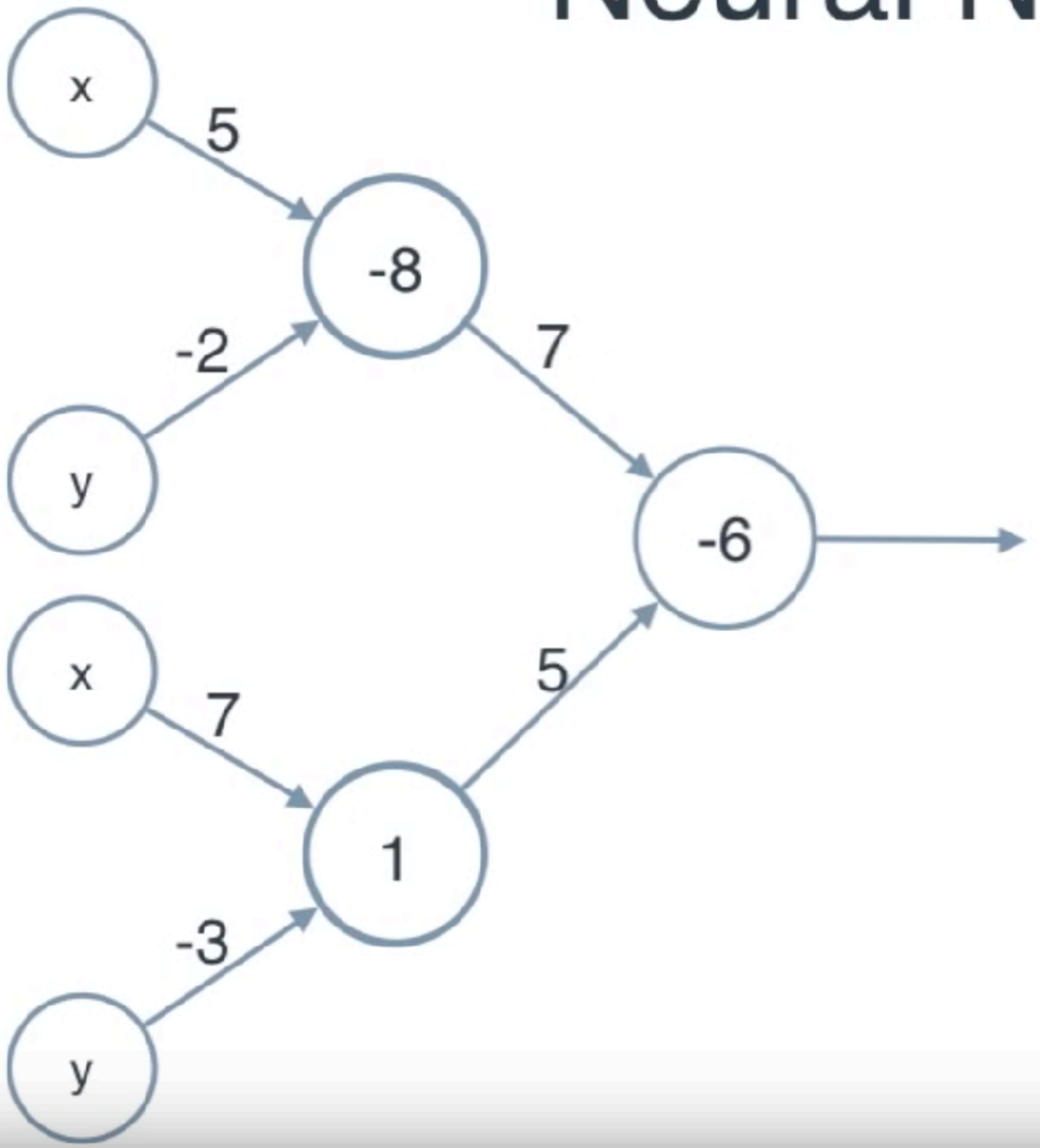
Neural Network

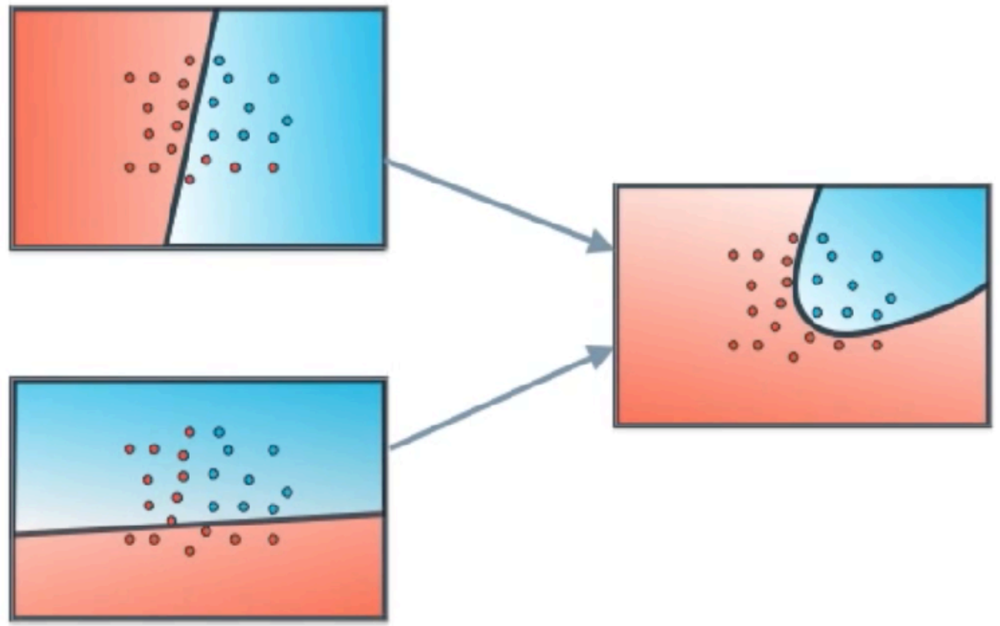


Neural Network

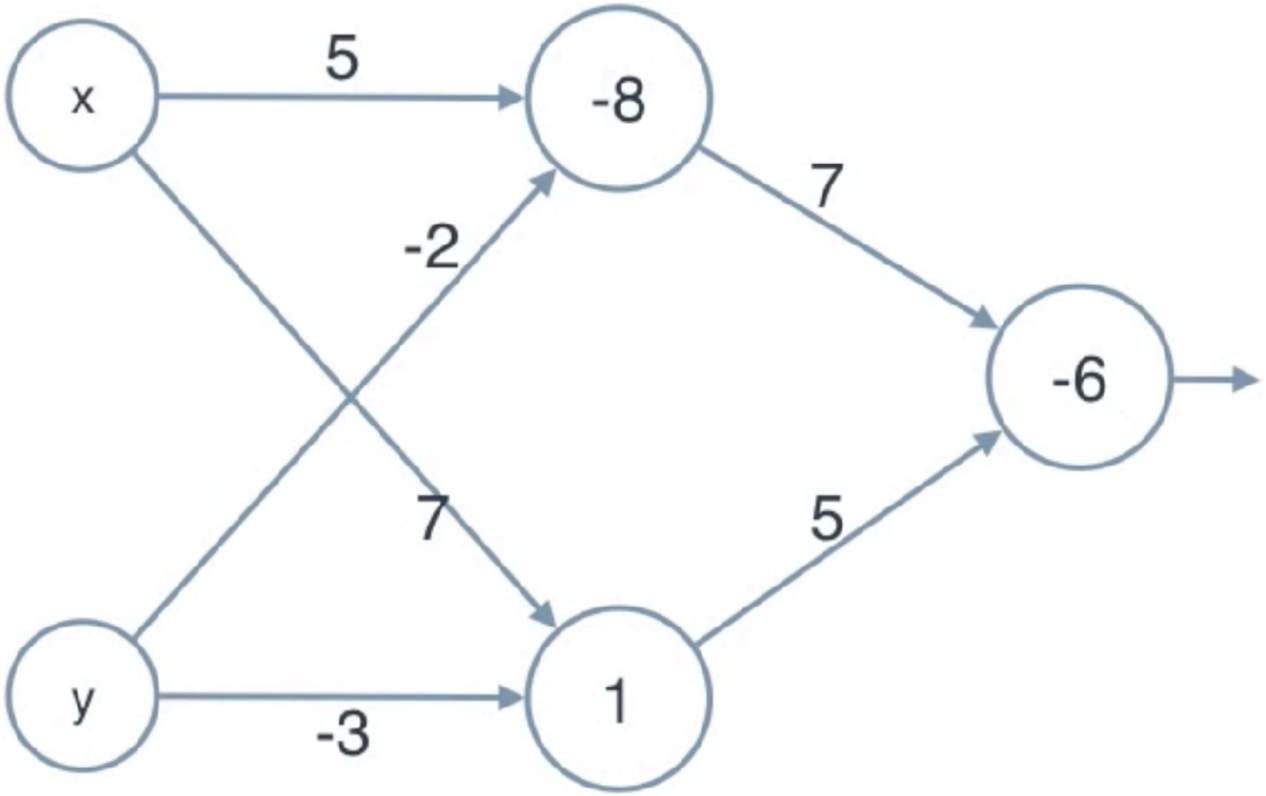


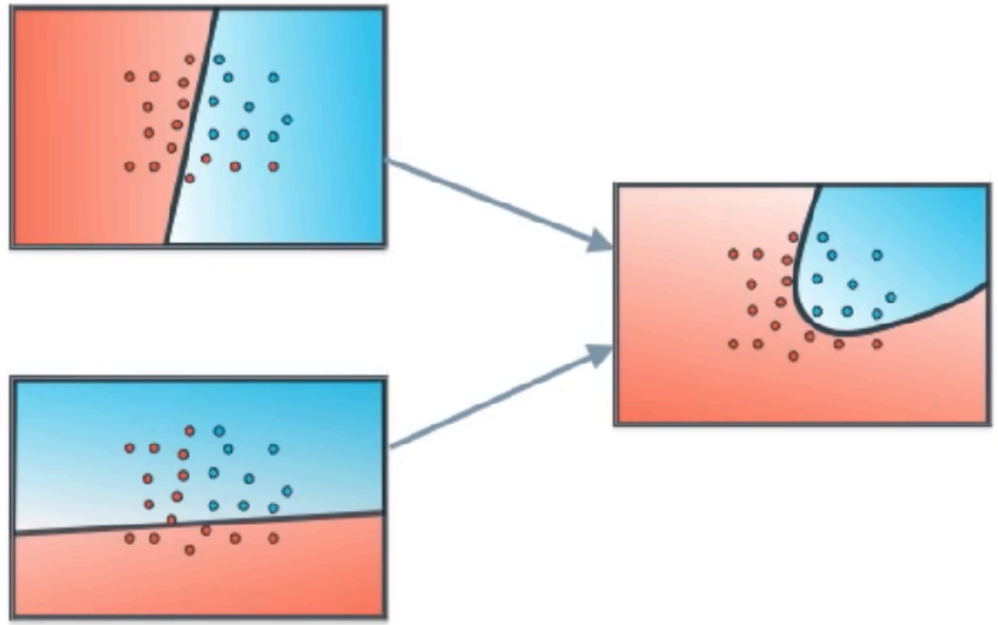
Neural Network



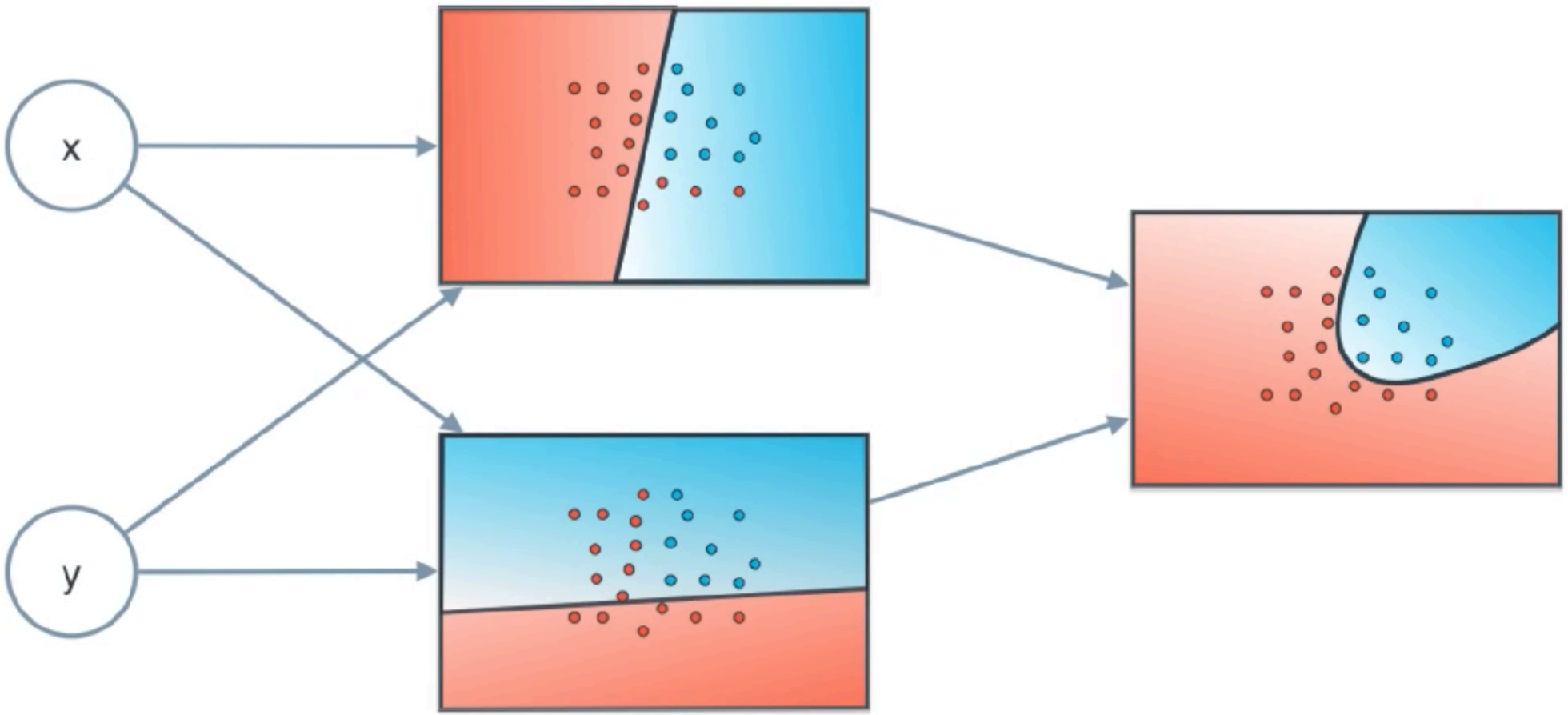


Neural Network

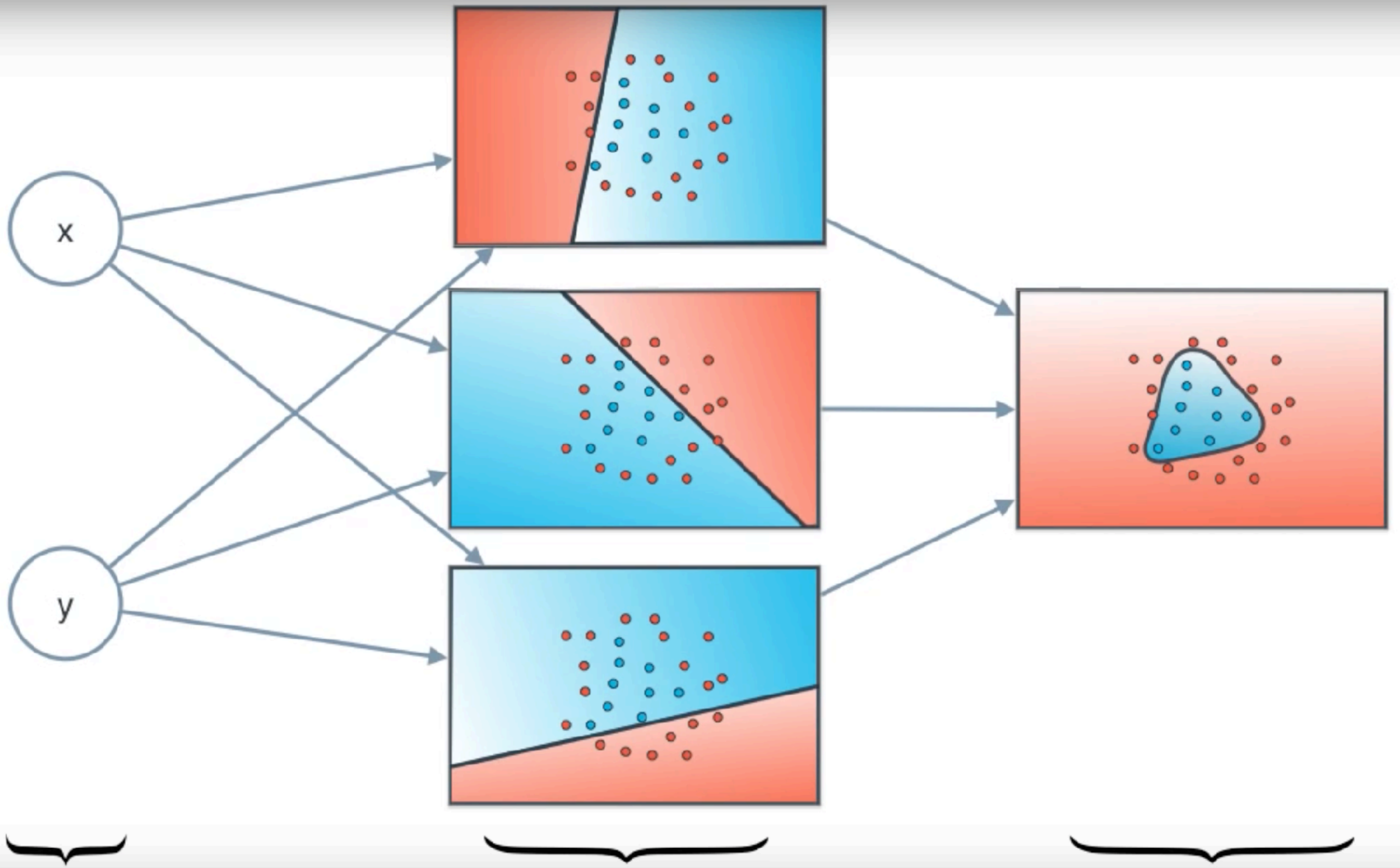




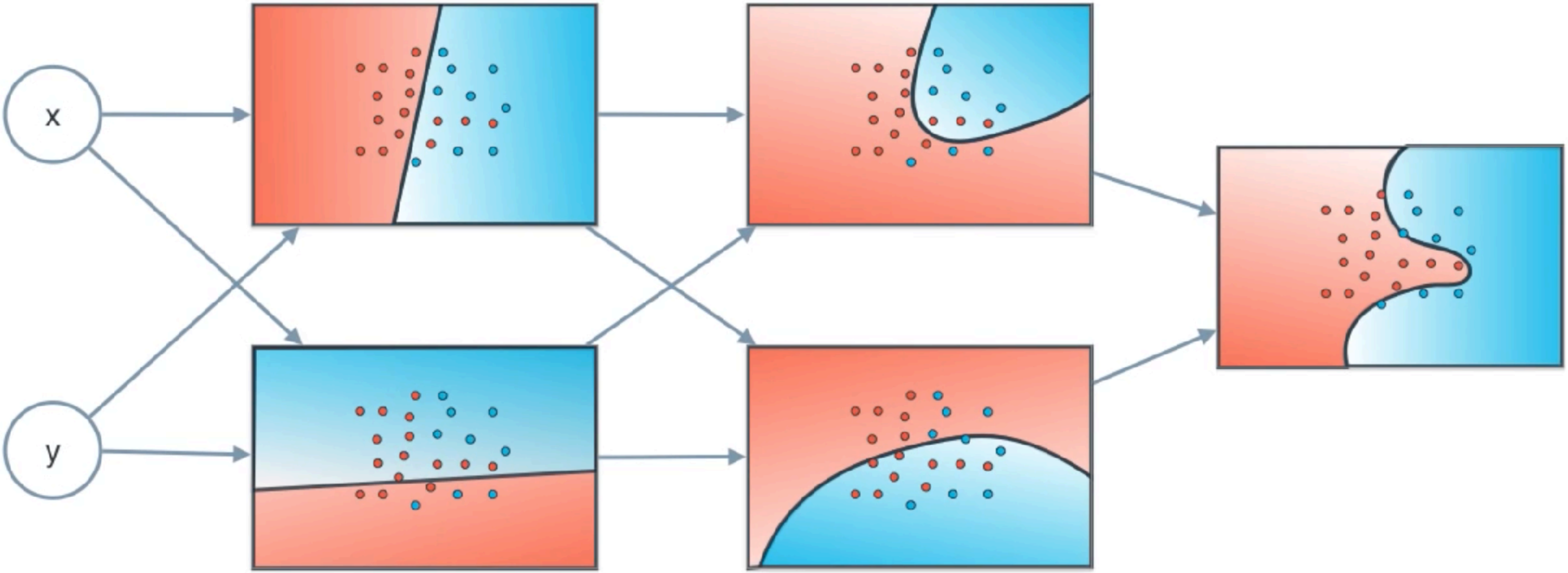
Neural Network



A friendly introduction to Deep Learning and Neural Networks



Deep Neural Network



Input layer Hidden layer Hidden layer Output layer

Dropout

Regularization

Activation Functions

Learning Rate Decay

Batch Normalization