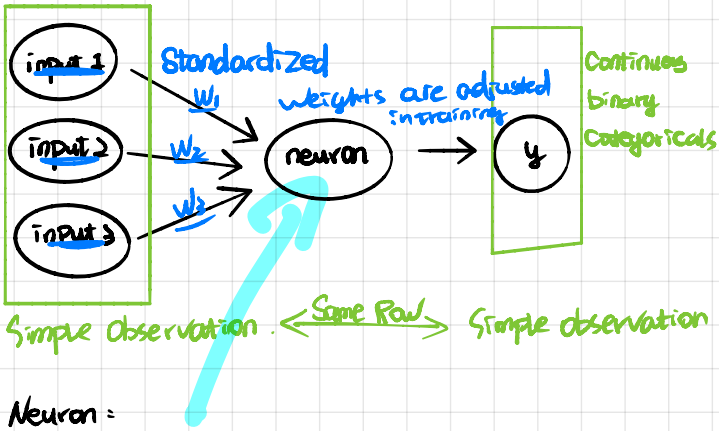
ANN = Artificial Neural Networks.



Neuron =

$$\phi\left(\sum_{i=1}^{m} w_i x_i\right)$$

activation function.

The activation functions.

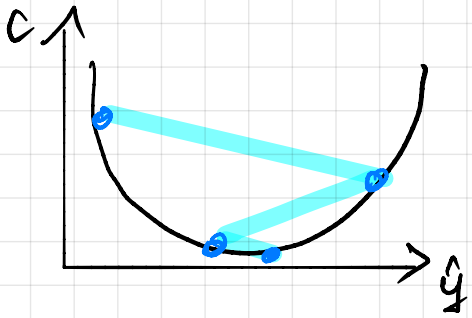
- threshold function.
- Sigmoid function: $\phi(x) = 1 / (1+e^{-x})$
- Rectifier function:
- Hyperbolic tagent function

How NN learn? =

Cost function =

$$C = 1/2\,(\hat{y} - y)^2$$

Batch Gradient Descent = adjust weight after 1 run of all rows



$$C = 1/2\,(\hat{y} - y)^2$$

Cost function needs to be convex.

Stochastic Gradiant Descent.

Justing weight after each rows

Backpropagation.

Training ANN with Stochastic Gradient Descent.

→ Randomly initilize weight to small number arround 0
→ Input first observation. in input layer.
→ forward propagation
→ Measure error
→ Back- Propogation
→ Repeat.

→ when whole training set's passed thru, that make an echo, more echos can be processed.

O'EILLY ML & TensorFlow.

Part 2. End-to-End Machine Learning Project.

↳ Look at the Big Picture → frame the problem

→ Select a Performance Measure.

多任务学