

Abara One More

May.28.2023

Ash-Hun



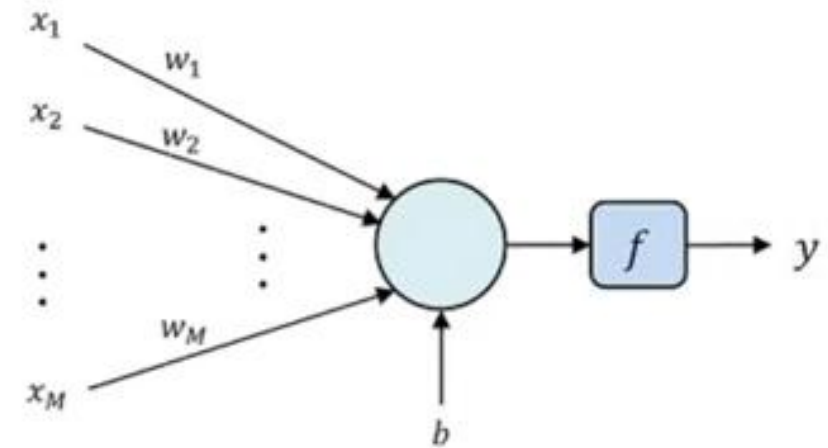
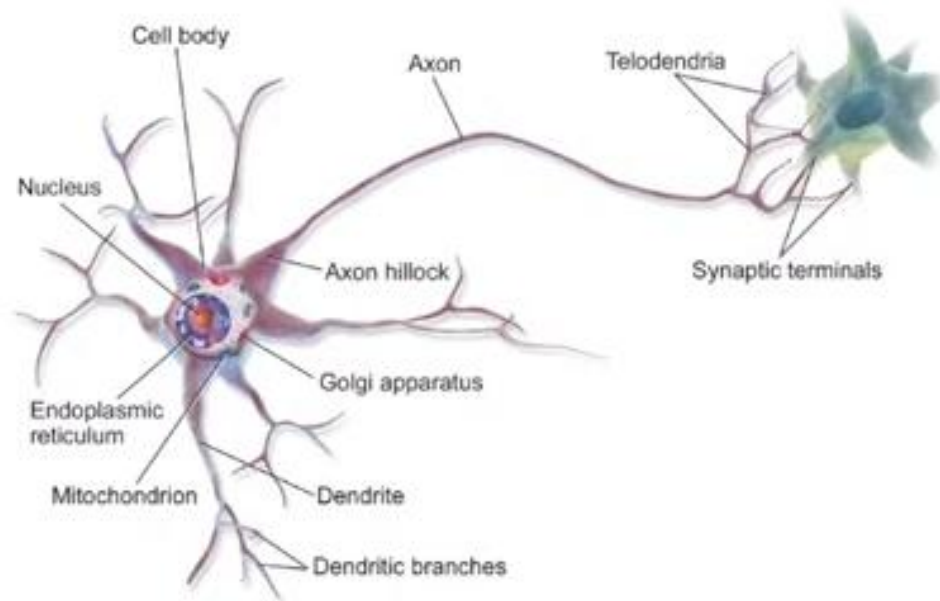
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 Neuron

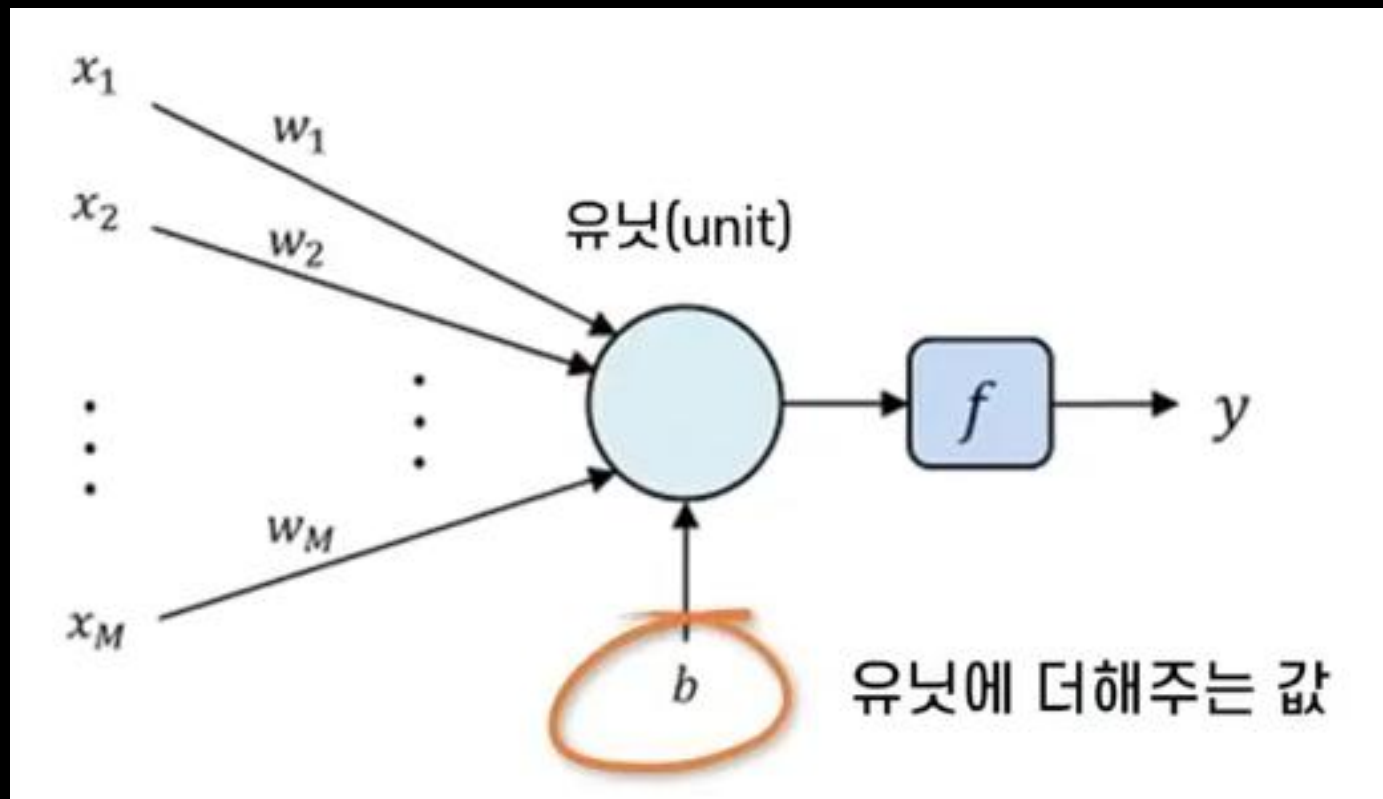
 Neural Network

 Hierarchical Representation Learning

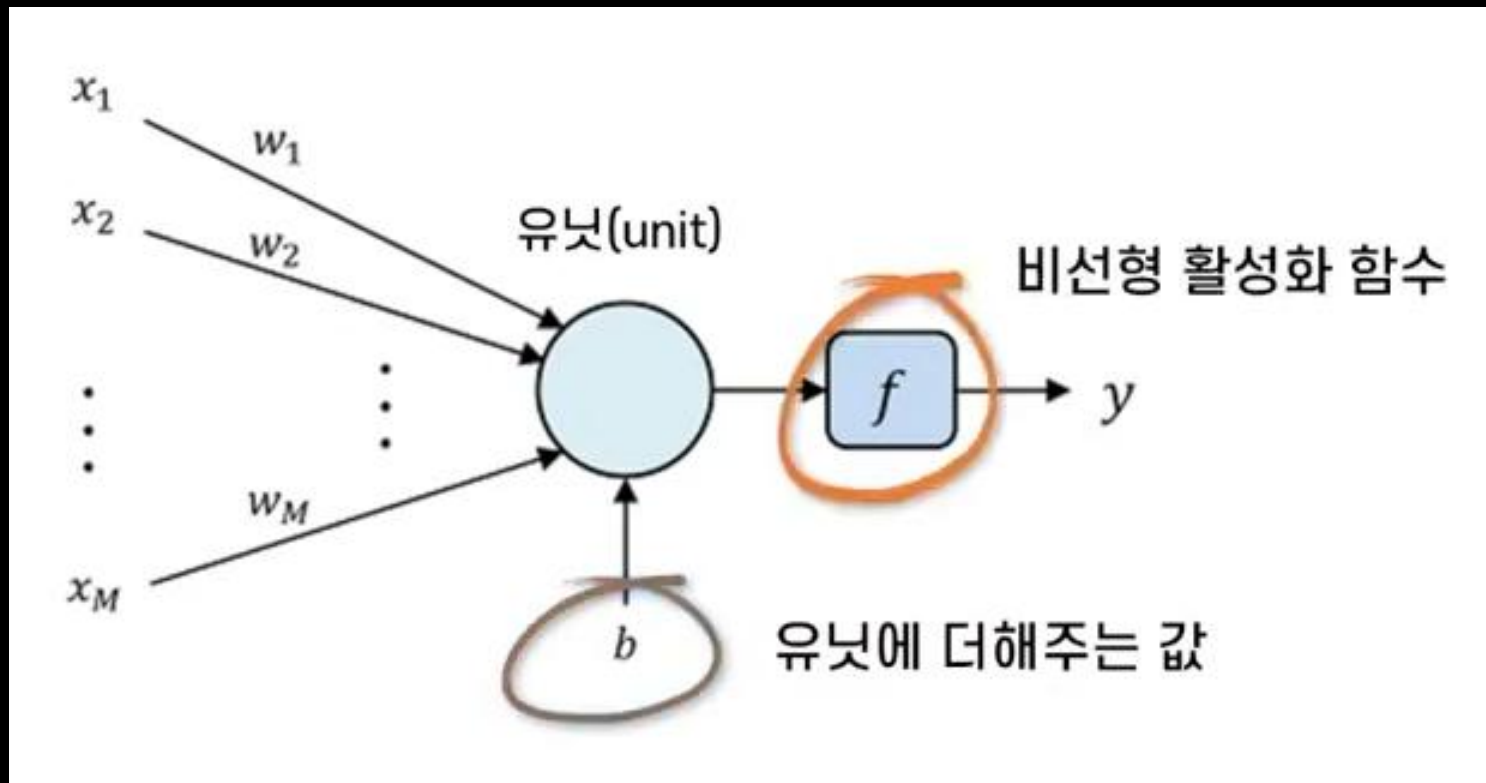
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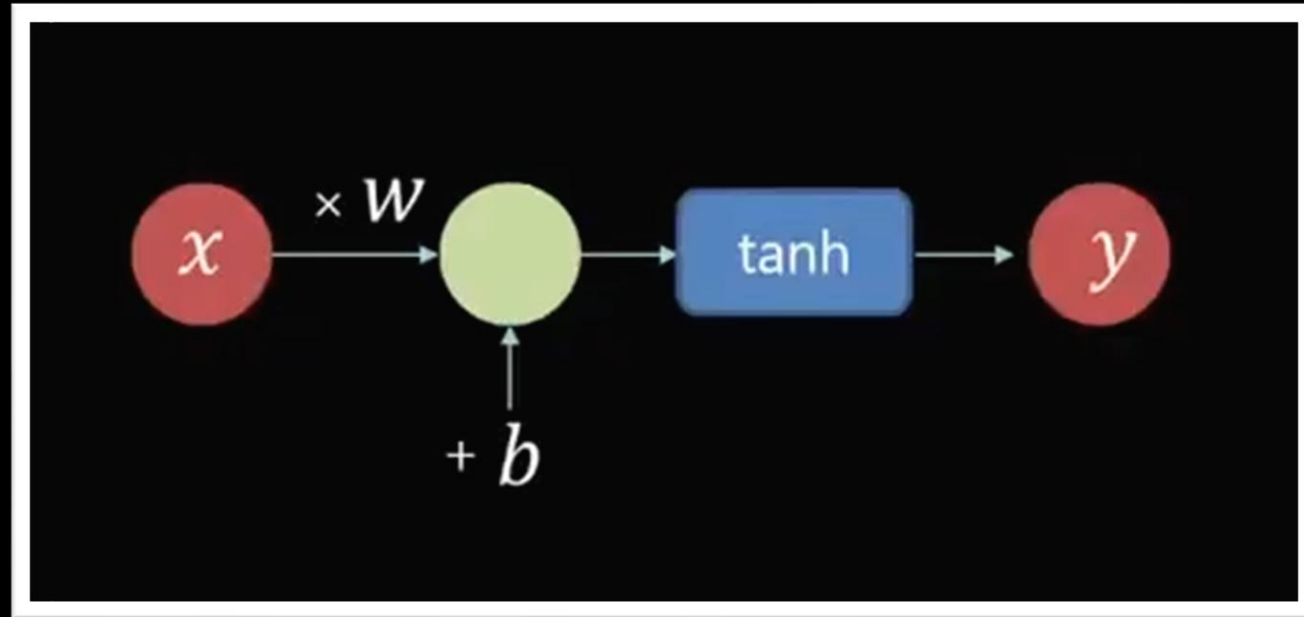
Neuron



Neuron

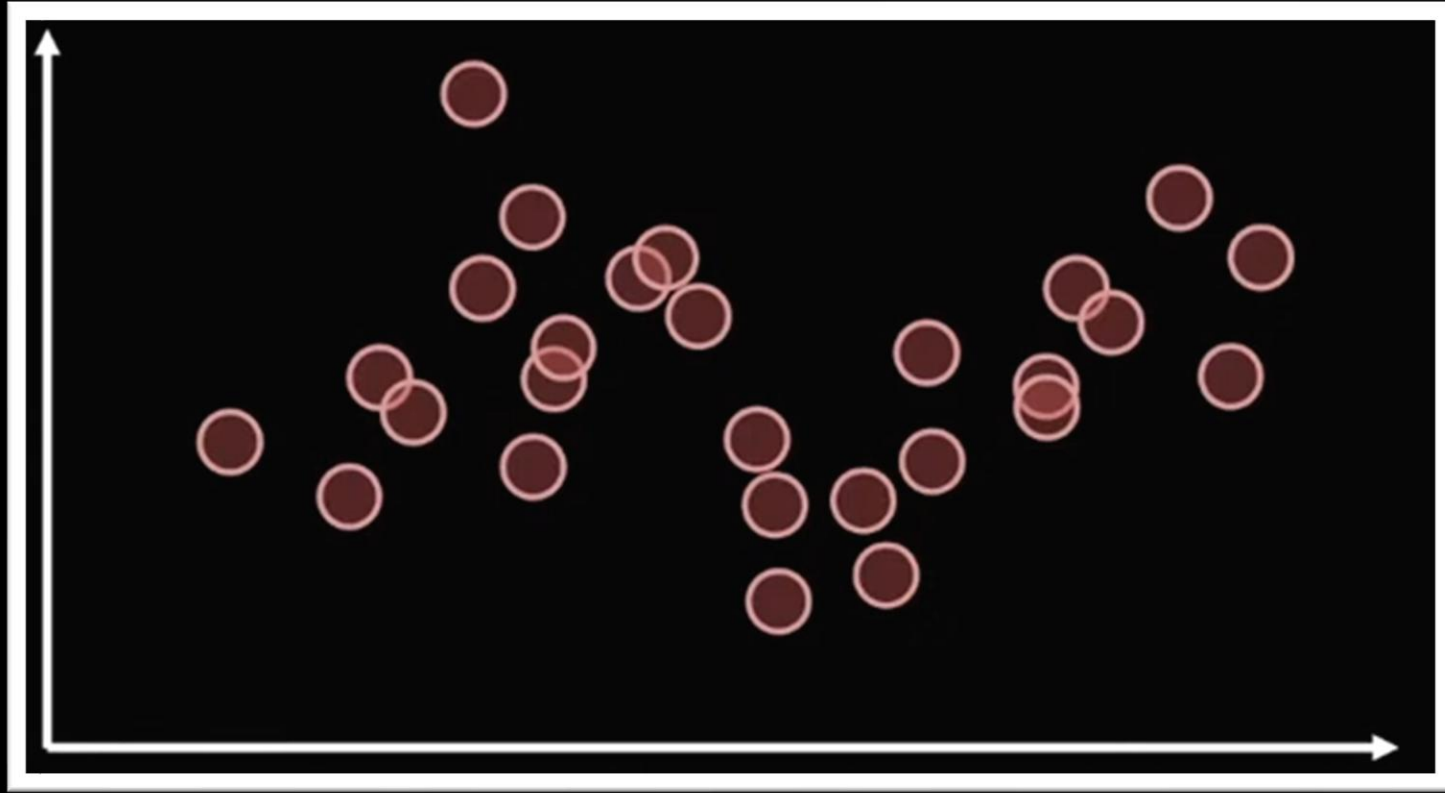


Neuron

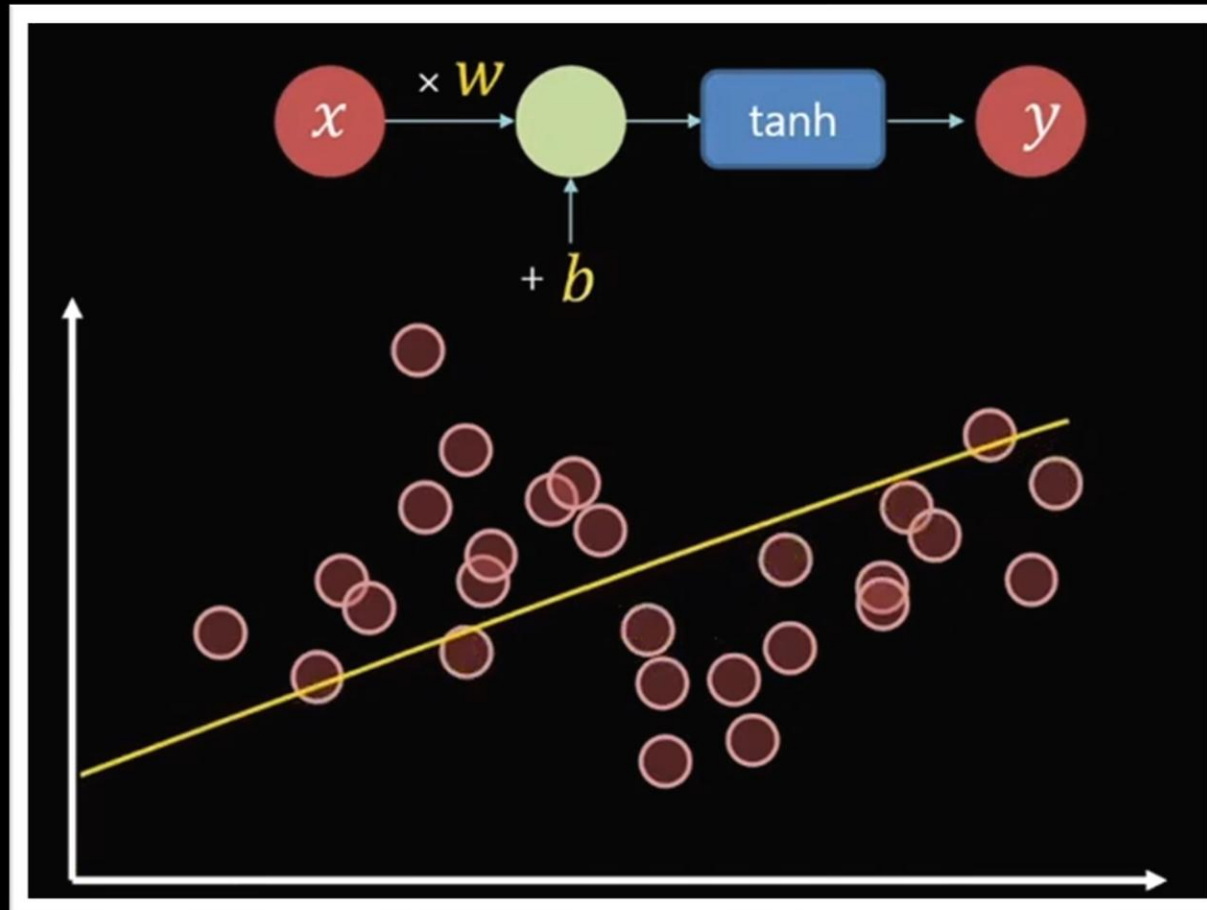


가장 심플한 형태

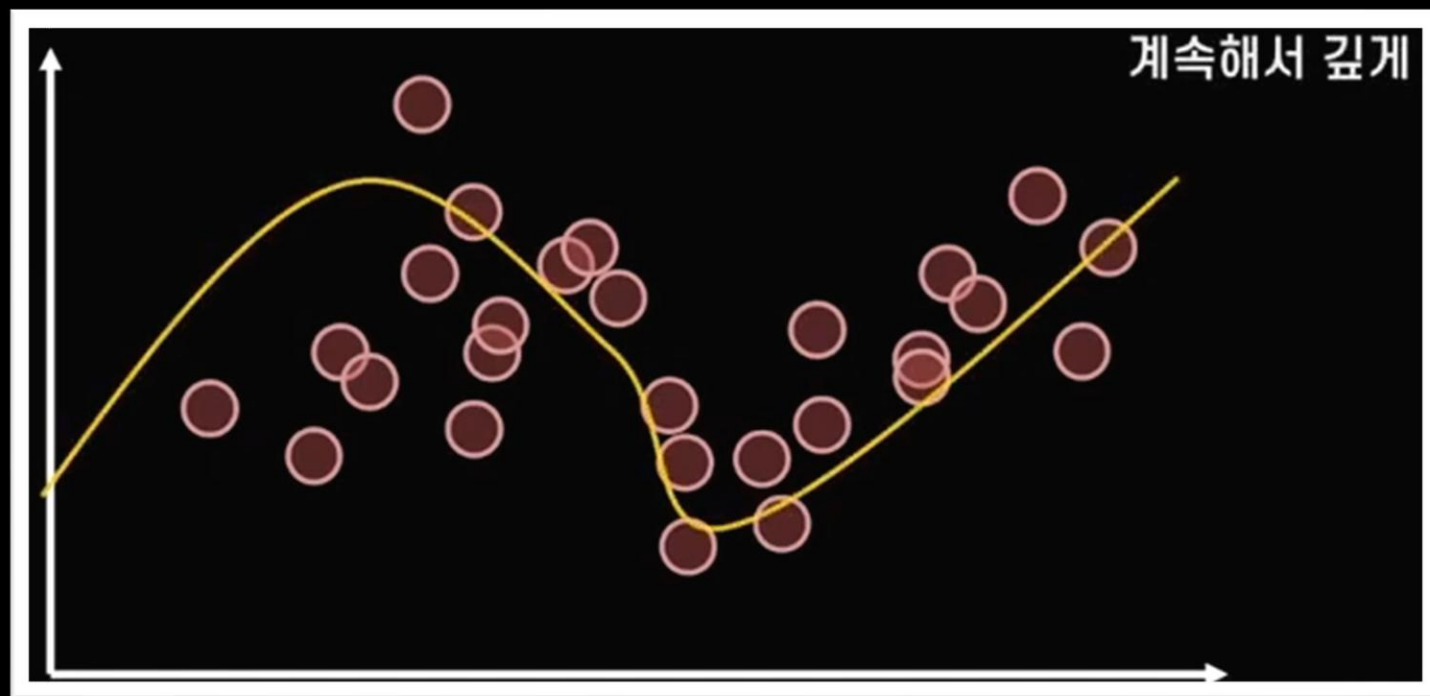
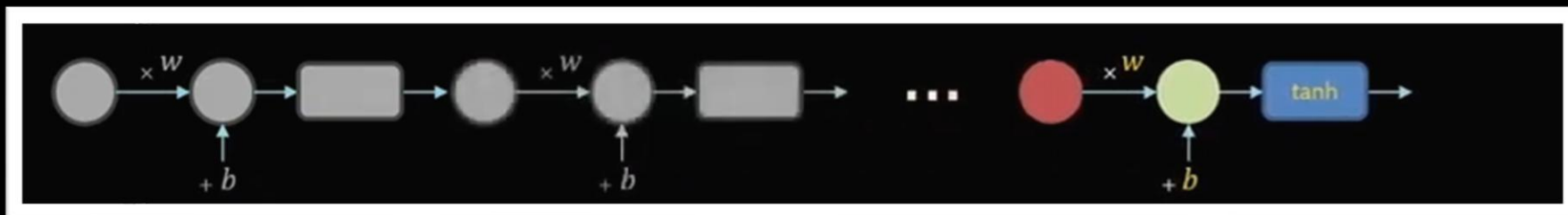
Neuron



Neuron

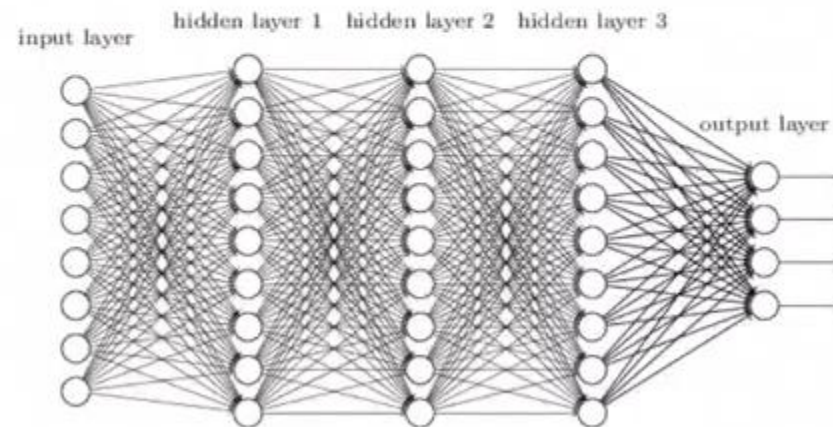
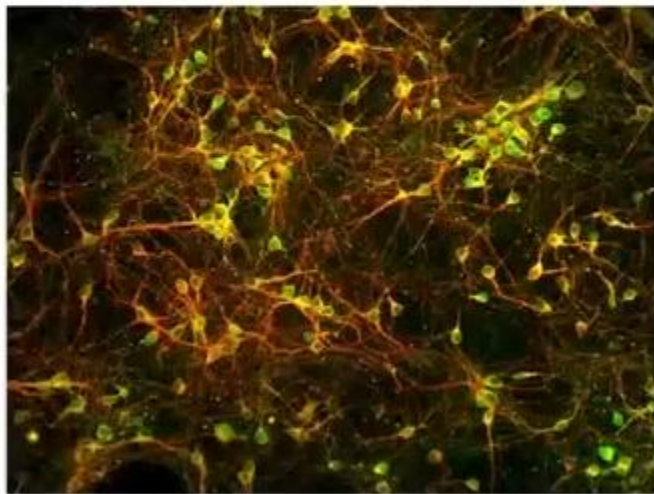
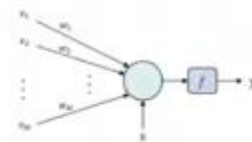
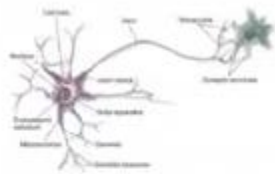


Neuron



Neural Network

뉴럴 네트워크

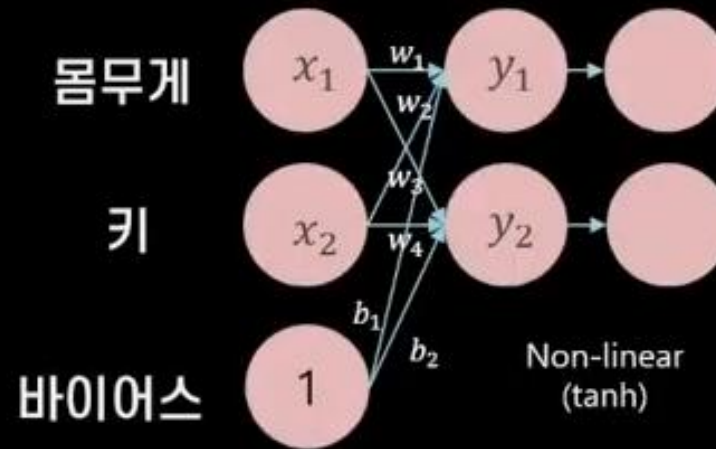


Hierarchical Representation Learning

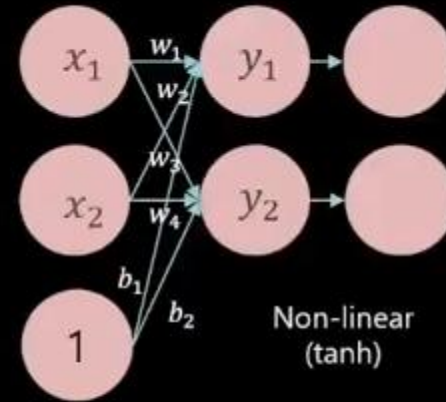
키와 몸무게로 여자인지 남자인지 구분해보기

Hierarchical Representation Learning

가장 간단한 한 레이어 케이스 예시 : 2차원



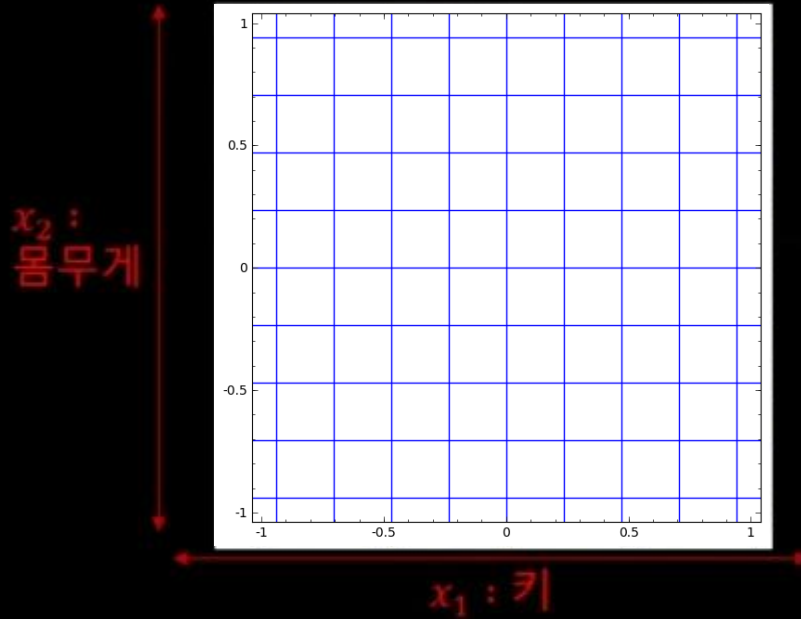
Hierarchical Representation Learning



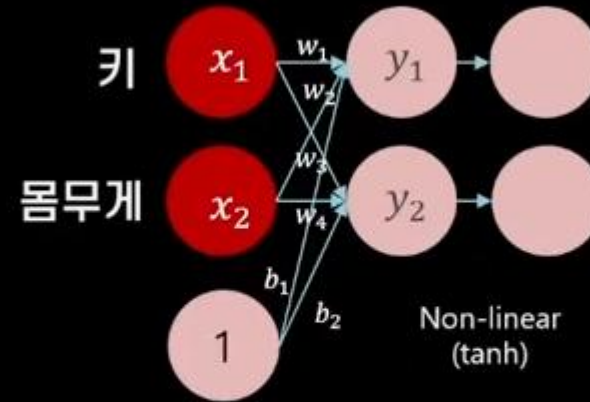
$$\begin{bmatrix} w_1 & w_2 \\ w_3 & w_4 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} b_1 \\ b_2 \end{bmatrix} = \begin{bmatrix} y_1 \\ y_2 \end{bmatrix}$$

$$W^T x + b = y$$

Hierarchical Representation Learning

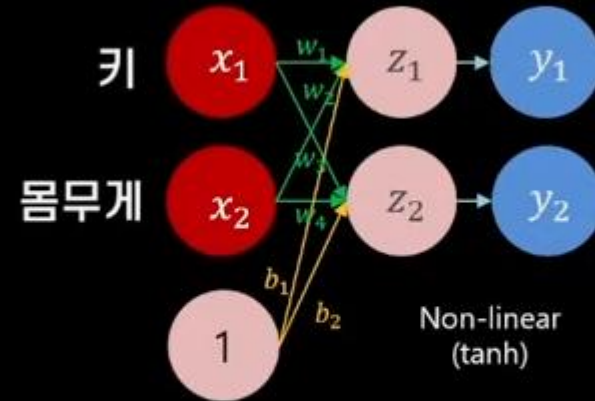
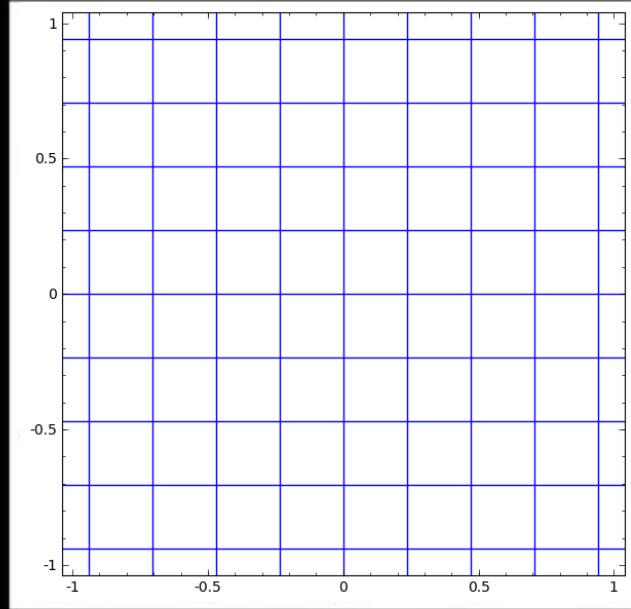


$$\begin{bmatrix} w_1 & w_2 \\ w_3 & w_4 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} b_1 \\ b_2 \end{bmatrix} = \begin{bmatrix} y_1 \\ y_2 \end{bmatrix}$$



$$W^T \mathbf{x} + \mathbf{b} = \mathbf{y}$$

Hierarchical Representation Learning



$$\sigma\left(\begin{bmatrix} w_1 & w_2 \\ w_3 & w_4 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} b_1 \\ b_2 \end{bmatrix}\right) = \begin{bmatrix} y_1 \\ y_2 \end{bmatrix}$$

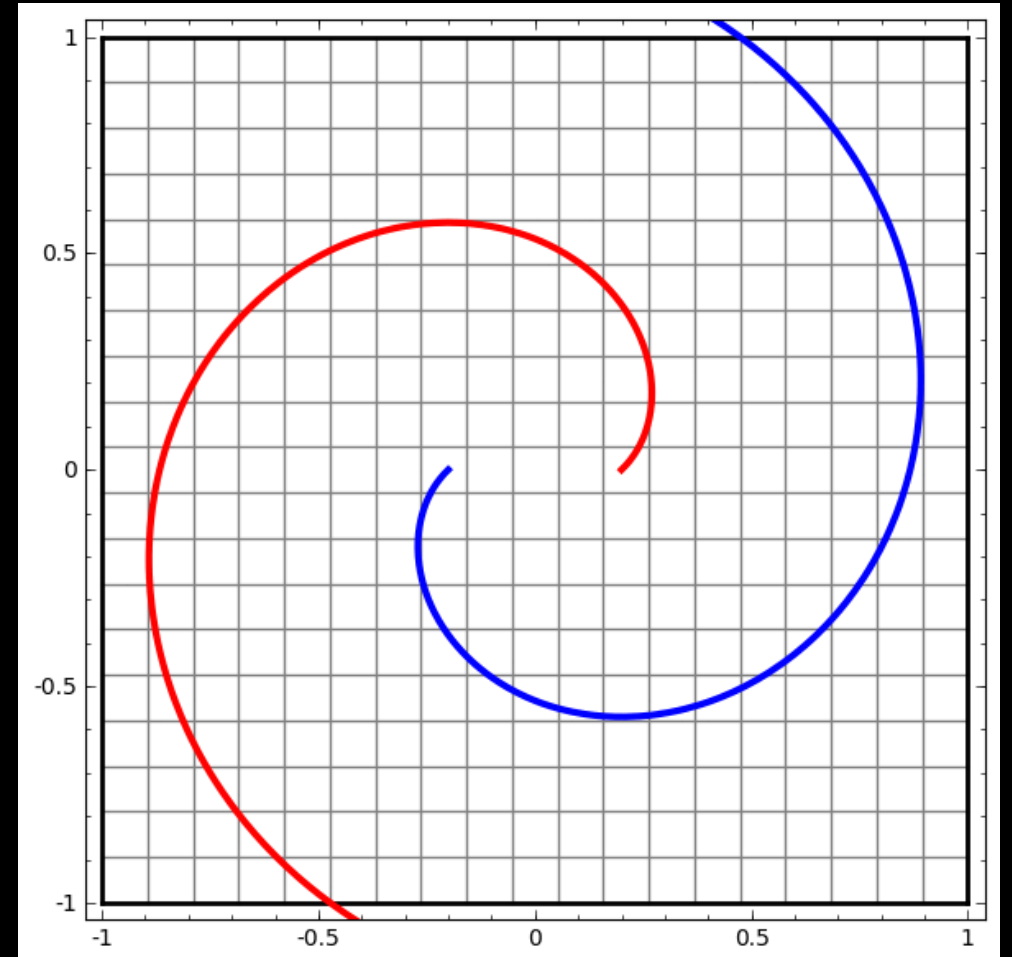
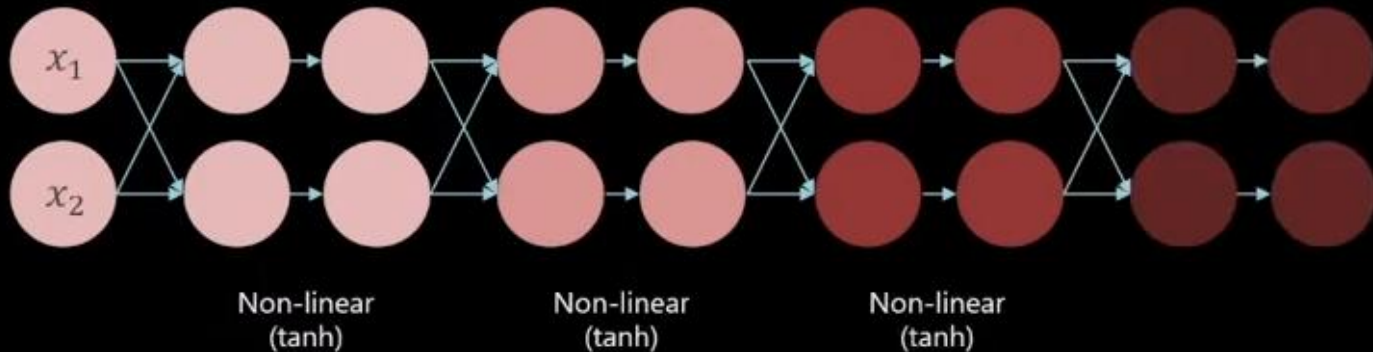
$$\sigma(W^T x + b) = y$$

Hierarchical Representation Learning

가정

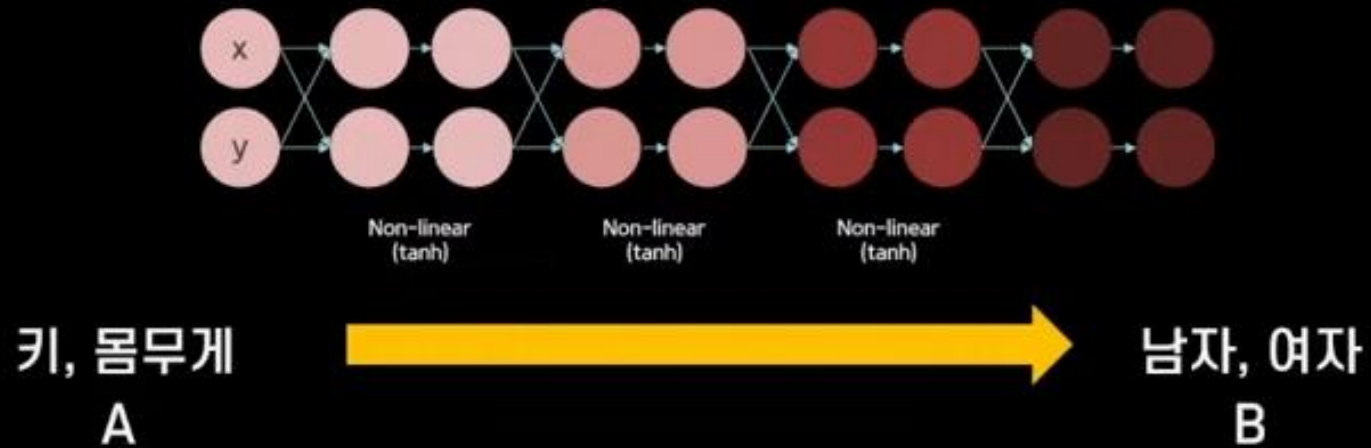
빨간색이 : 여자

파란색이 : 남자



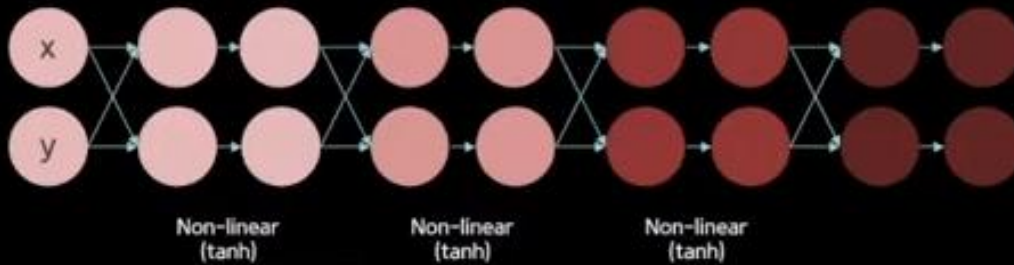
Hierarchical Representation Learning

Hierarchical Representation Learning (계층적 표현 학습)



Hierarchical Representation Learning

Hierarchical Representation Learning (계층적 표현 학습)



키, 몸무게
A



남자, 여자
B

= MLP
(Multi Layer Perceptron)

Q & A

May.16.2023

Ash-Hun

