Neural Networks

Theory & Applications

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github.com/yungbyun/**neuralnetworks**

Neural Networks?


1
2
3
4
5
6
7

Intelligence

Artificial Neural Networks

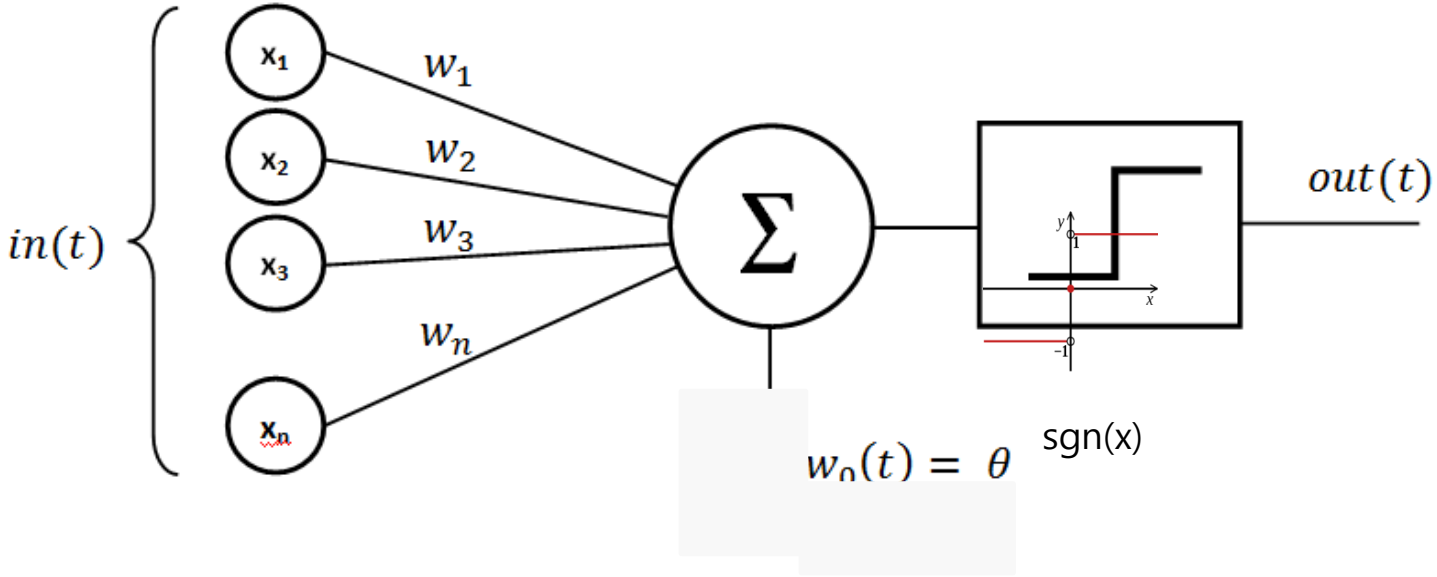
> "...a computing system made up of a number of simple, highly interconnected processing elements, which process information by their dynamic state response to external inputs."

Frank Rosenblatt, Cornell Aeronautical Lab (1957)

Artificial Intelligence

Frank Rosenblatt

Perceptron



ANN and rosy prospects in 1950s

NEW NAVY DEVICE LEARNS BY DOING; Psychologist Shows Embryo of Computer Designed to Read and Grow Wiser

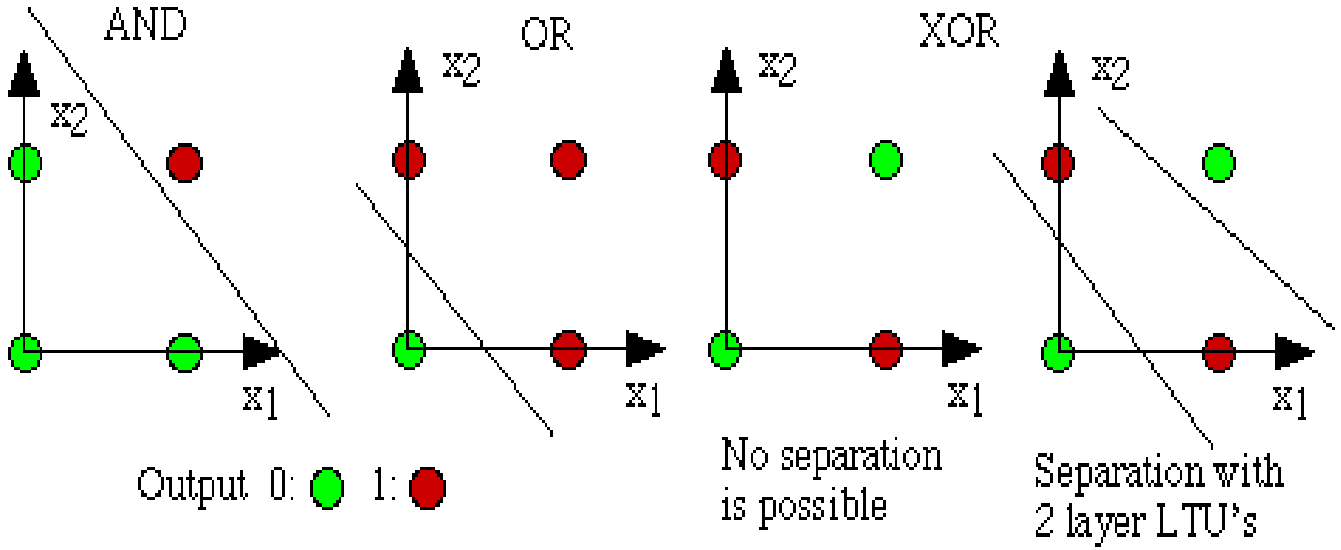
July 8, 1958

The New York Times Archives

1st Period of Depression in 1960s

Marvin Minsky, MIT

No solution for XOR problem



Muti-Layer Perceptron

by Rumelhart, Hinton, Williams
in 1986



2st Period of Depression in 1990s

- Difficulties in training MLP
- Not enough data
- Long Learning Time
- Overfitting

Deep Learning in 2000s


INTERNET


AlphaGo

Many applications using ANN

- Human brain
- Machine Learning
- Linear Regression
- Minimizing Cost
- Logistic Classification
- Softmax Regression
- MLP
- Deep Learning

TensorFlow

Schedule

Week	Subject
1	
2	Introduction (Y. Byun)
3	Brain and Artificial Neural Networks
4	Linear Regression
5	Minimizing Cost
6	Logistic Classification and Softmax
7	Multilayer NN
8	

Schedule

Week	Presenter
9	Deep Learning
10	Convolutional Neural Network
11	RNN & LSTM
12	Presentation#1
13	Presentation#2
14	Presentation#3
15	Presentation#4