github.com/yungbyun/dla

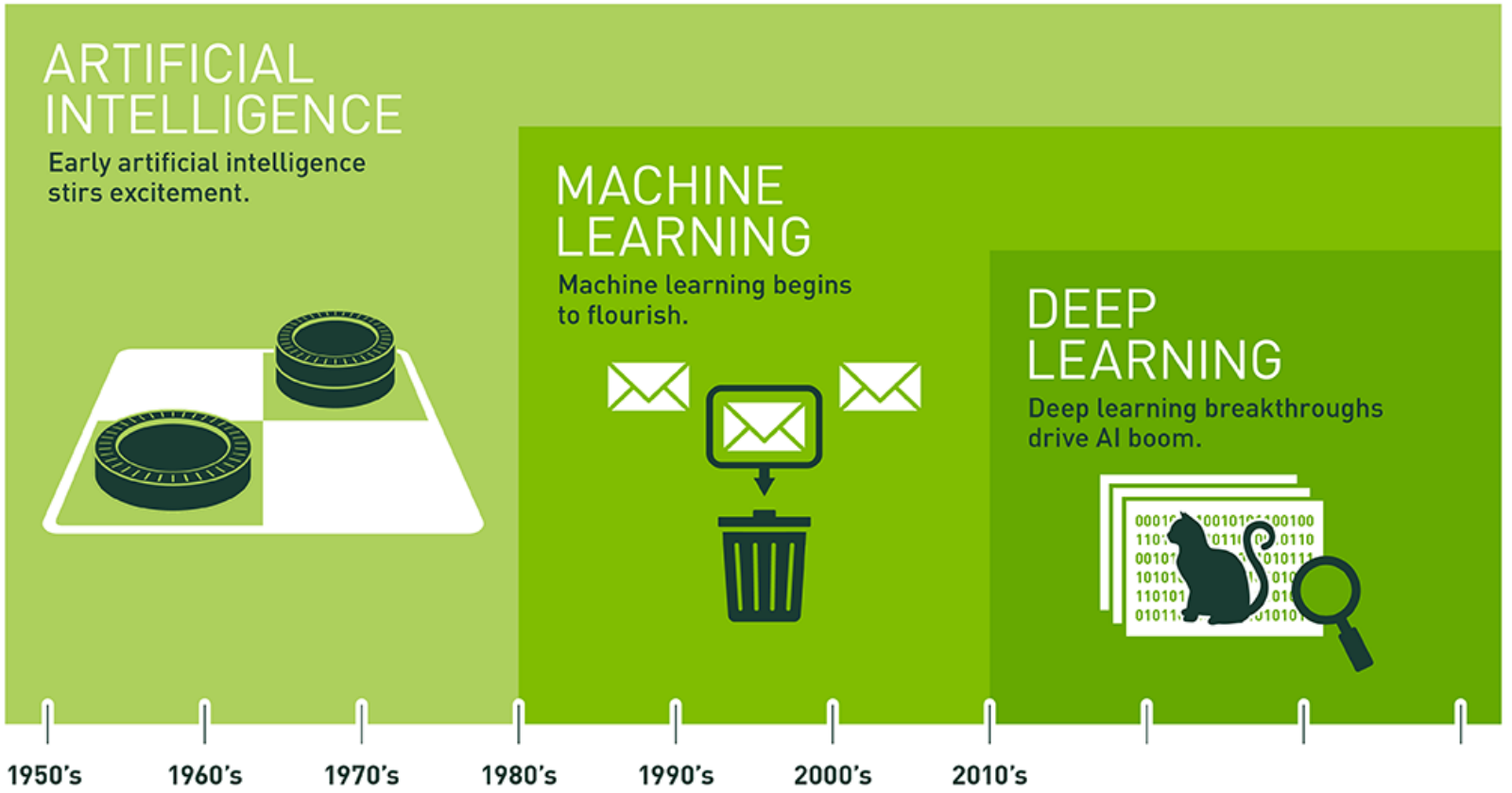
Deep Learning Applications

PROF. YUNG CHEOL **BYUN**

Learning, Deep

- Learning is the process of gaining knowledge from experience (data, csv).
- Intelligence is the ability to learn.
- [Intelligence] The ability to perceive or infer information, and to retain it as knowledge to be applied towards adaptive behaviors within an environment or context.
- Deep is the way to describe the representation of an artificial neural network to implement the Intelligence.

Artificial Intelligence



Since an early flush of optimism in the 1950s, smaller subsets of artificial intelligence – first machine learning, then deep learning, a subset of machine learning – have created ever larger disruptions.

Artificial Neural Networks

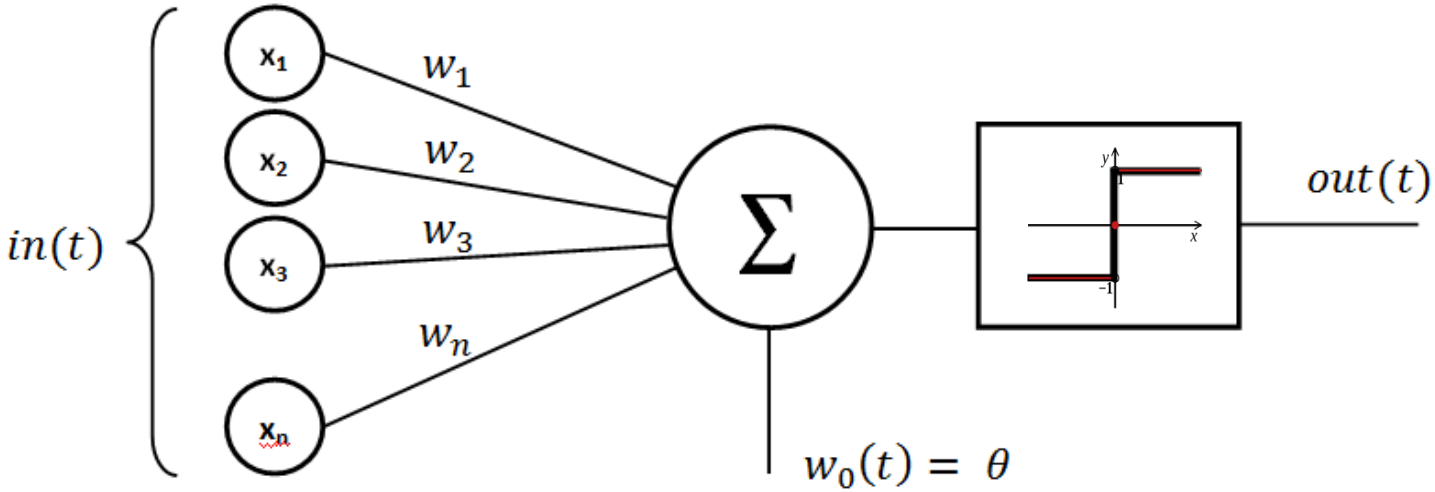
made by people, 사람이 만든

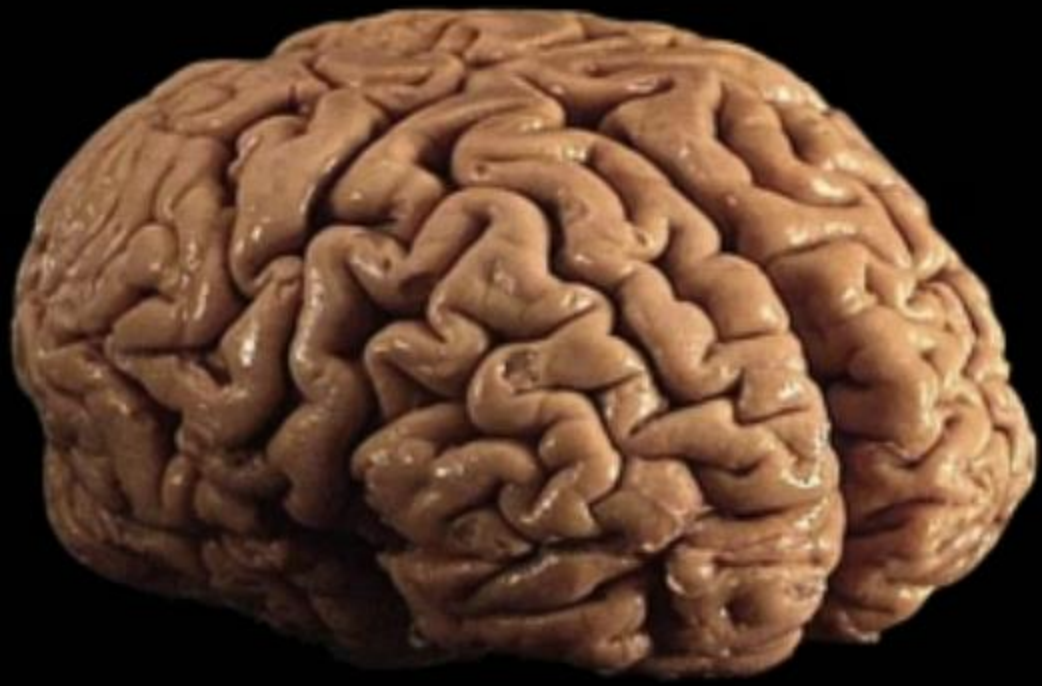
> "...a computing system made up of a number of simple, highly interconnected processing elements, which process information by their dynamic state response to external inputs."

Frank Rosenblatt, Cornell Aeronautical Lab
(1957)

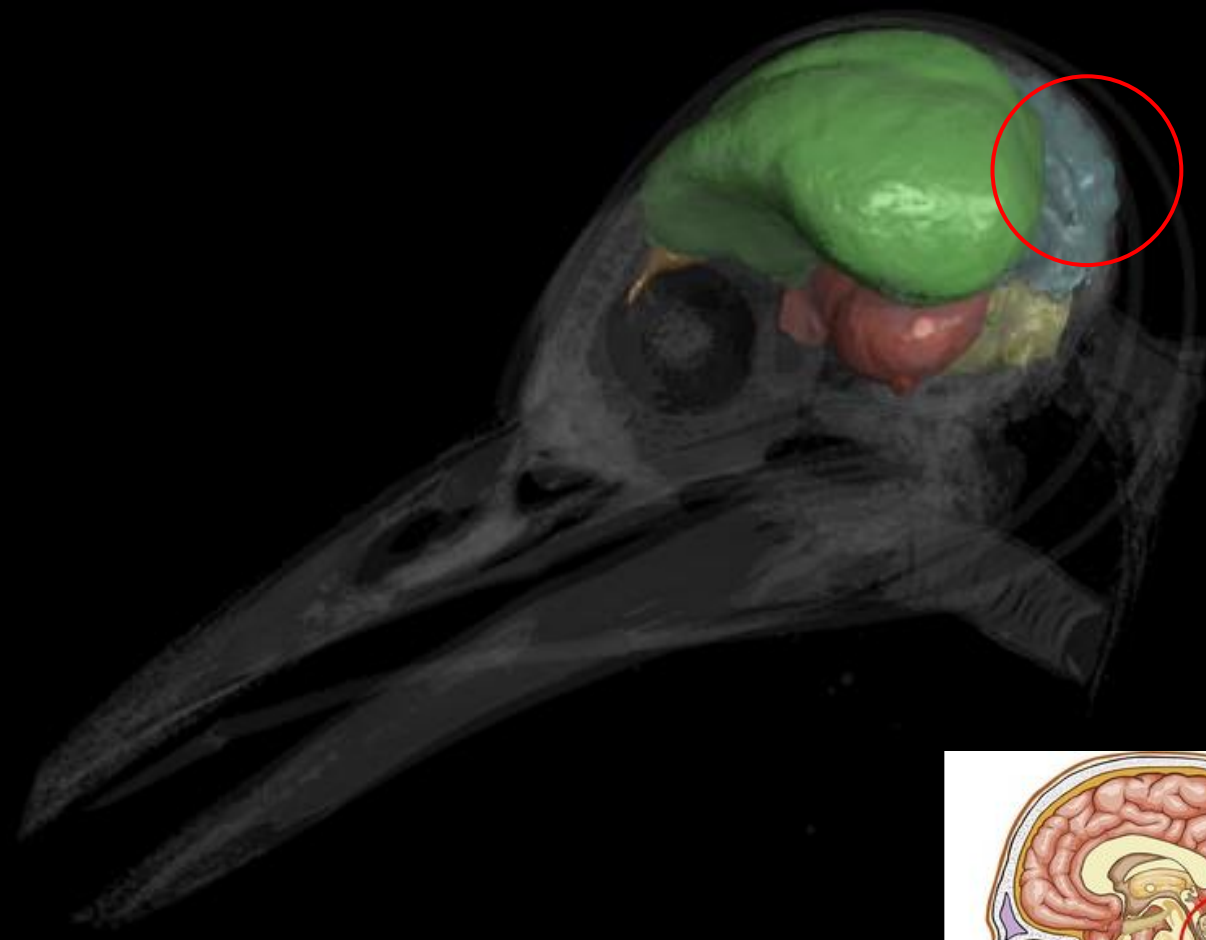
Rosenblatt, F. (1958). The perceptron: A probabilistic model for information storage and organization in the brain. *Psychological Review, 65*(6), 386–408. https://doi.org/10.1037/h0042519

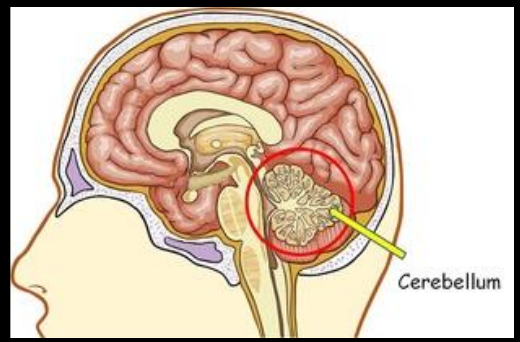
Perceptron

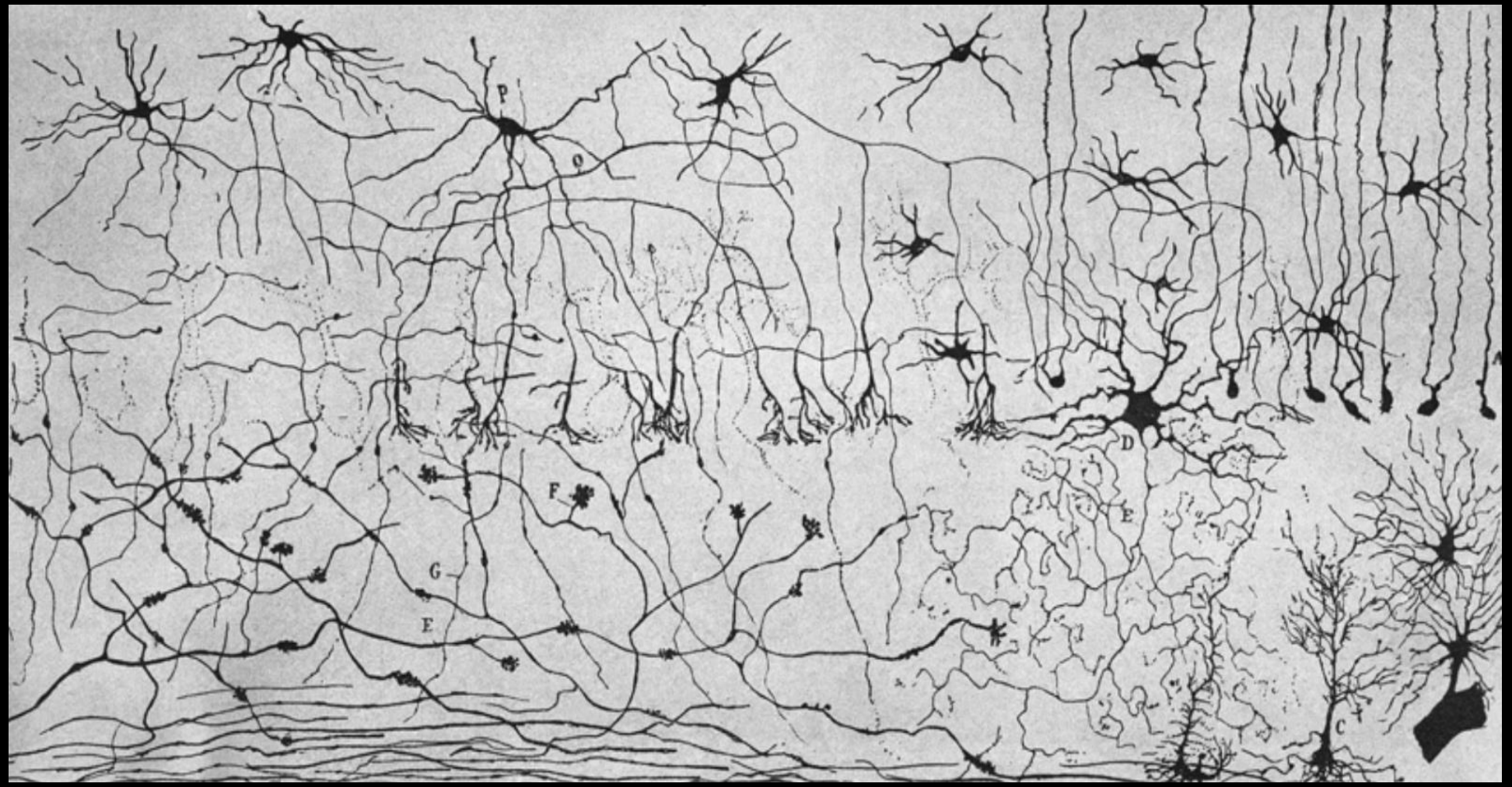




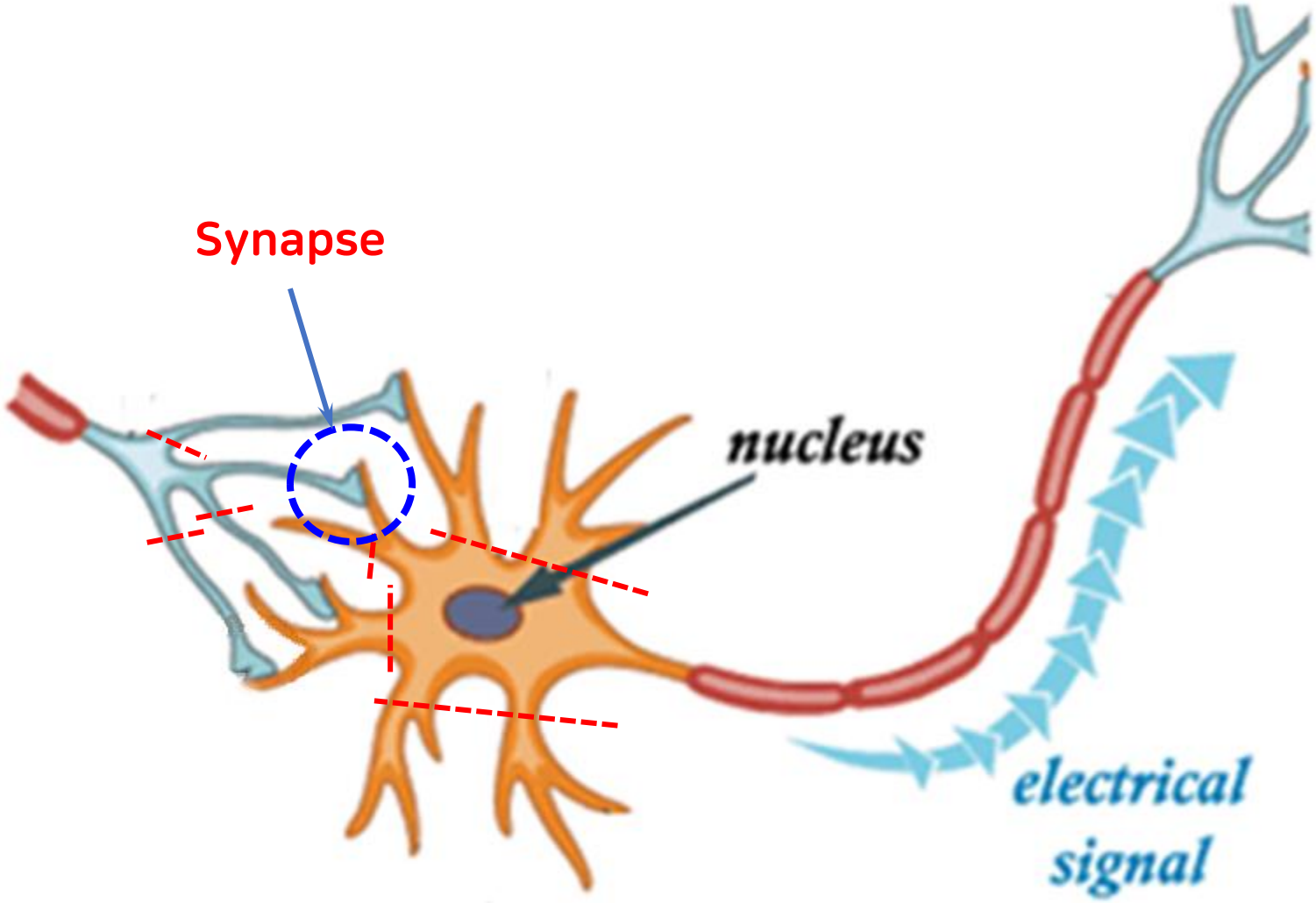
산티아고 라모 니 카할, 스페인




Cerebellum

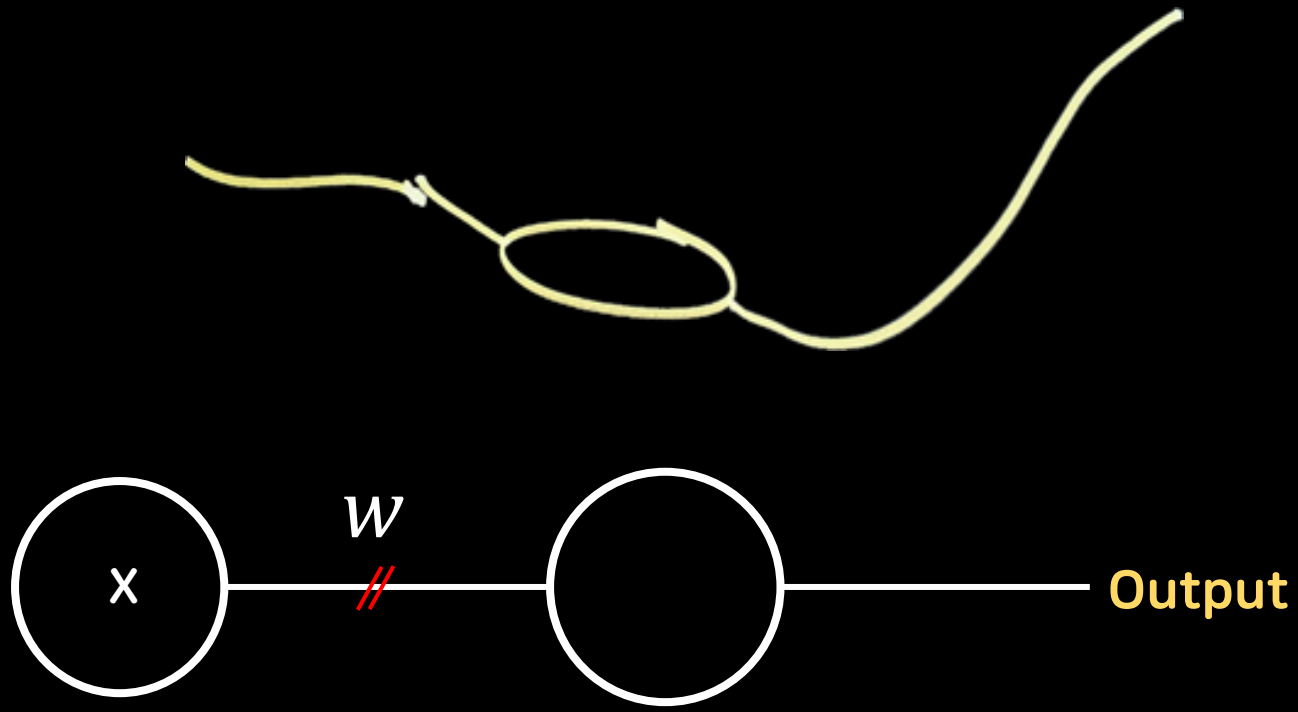


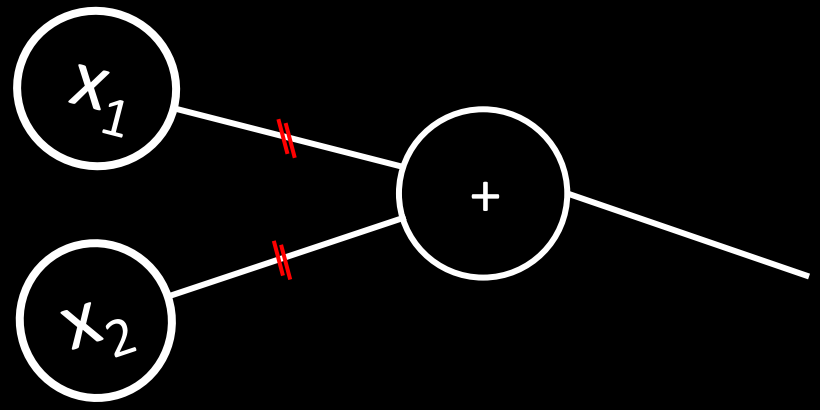
Ramón y Cajal's drawing of the neurons in a bird's cerebellum with a microscope – a part of the brain.

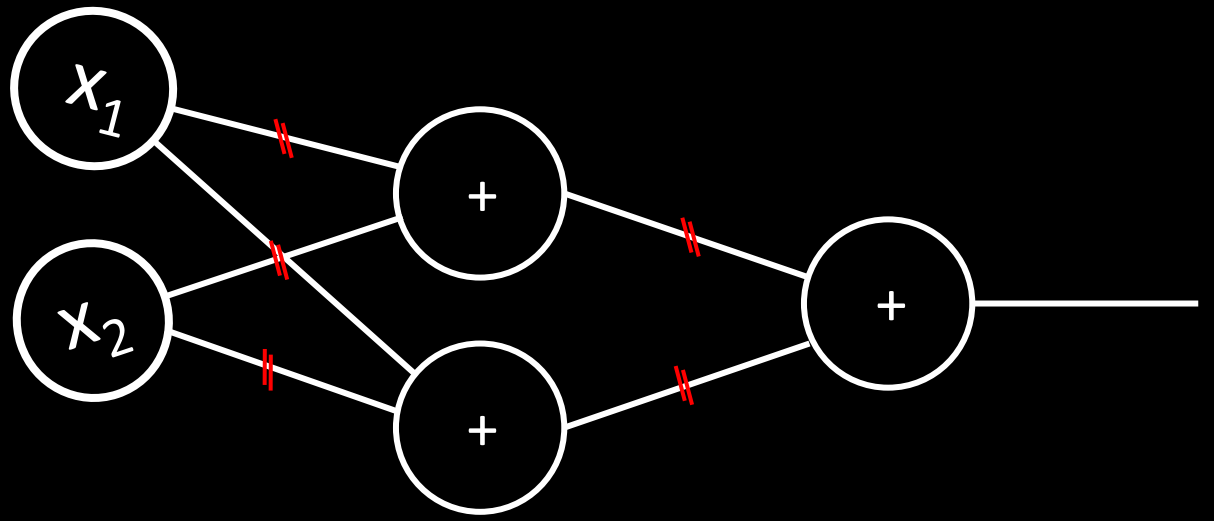

Synapse
nucleus
electrical
signal

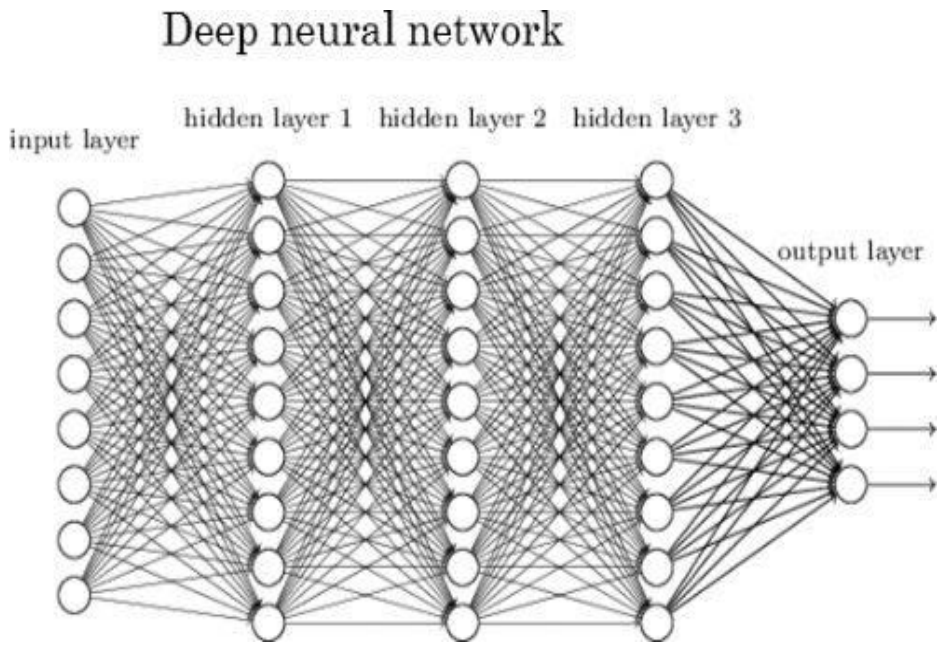

electrical
signal


Output
input
x
w

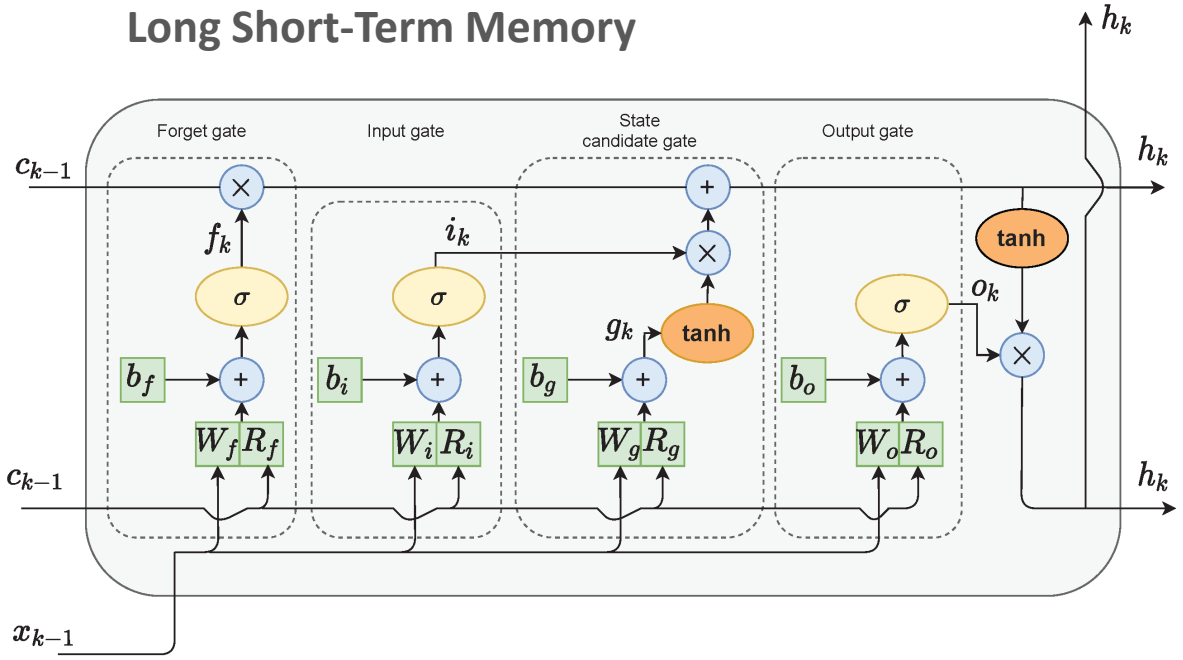

w
x
Output

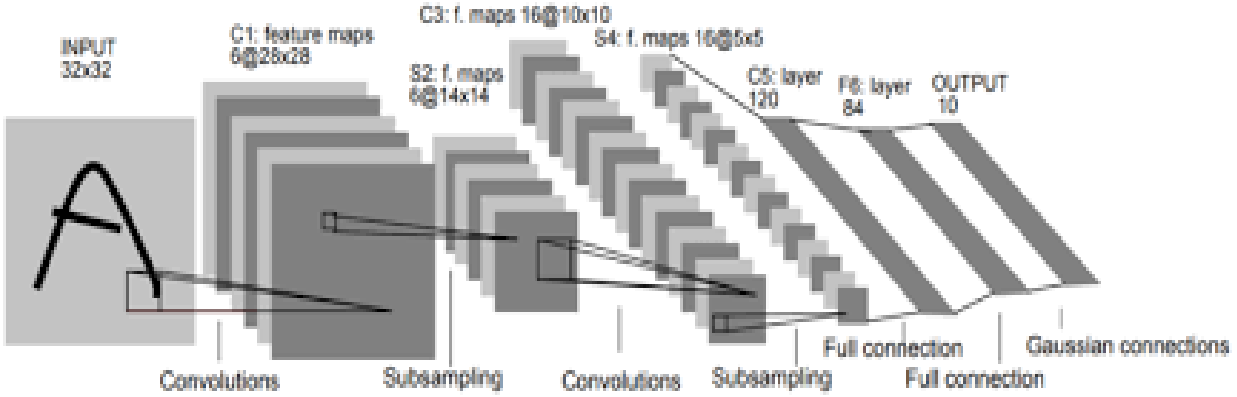

x_1
x_2
+


x_1
x_2
+
+
+



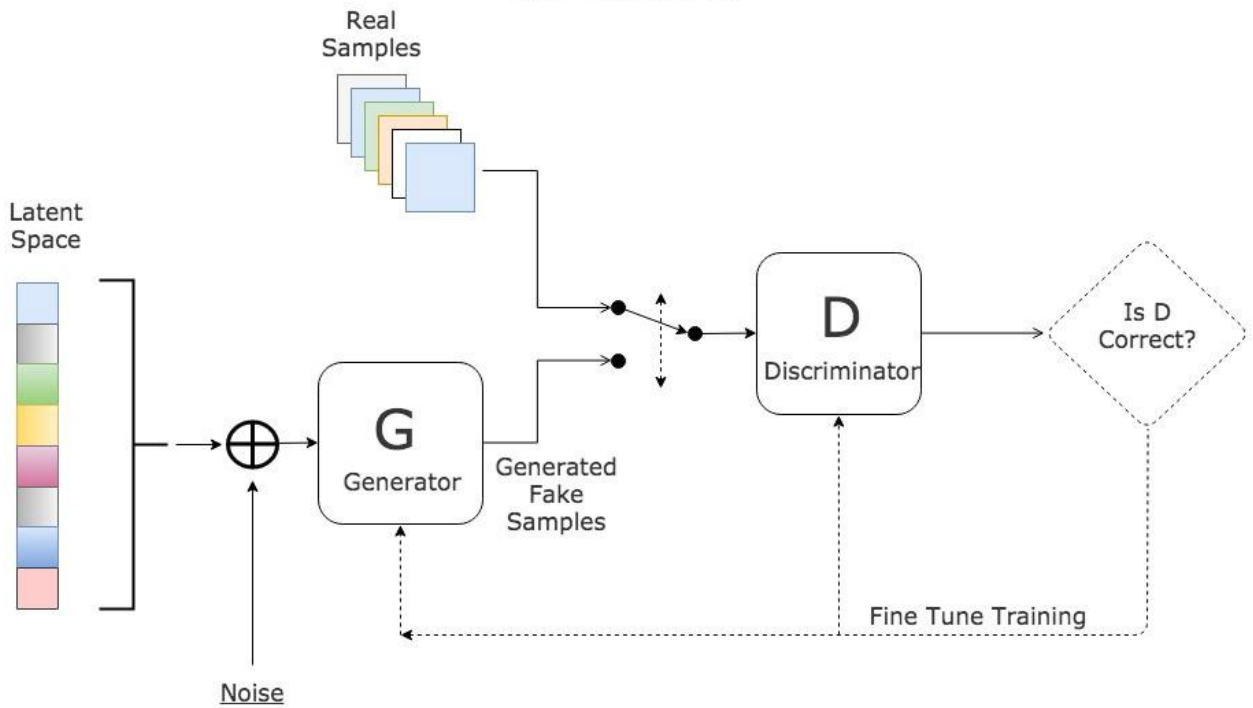
Long Short-Term Memory





Convolutional Neural Network

Generative Adversarial Network



구글 어시스턴트

미용실 직원


MOULLEC
ABSY.TV
aeroplane : 0.21

Real-time event detection for video surveillance applications

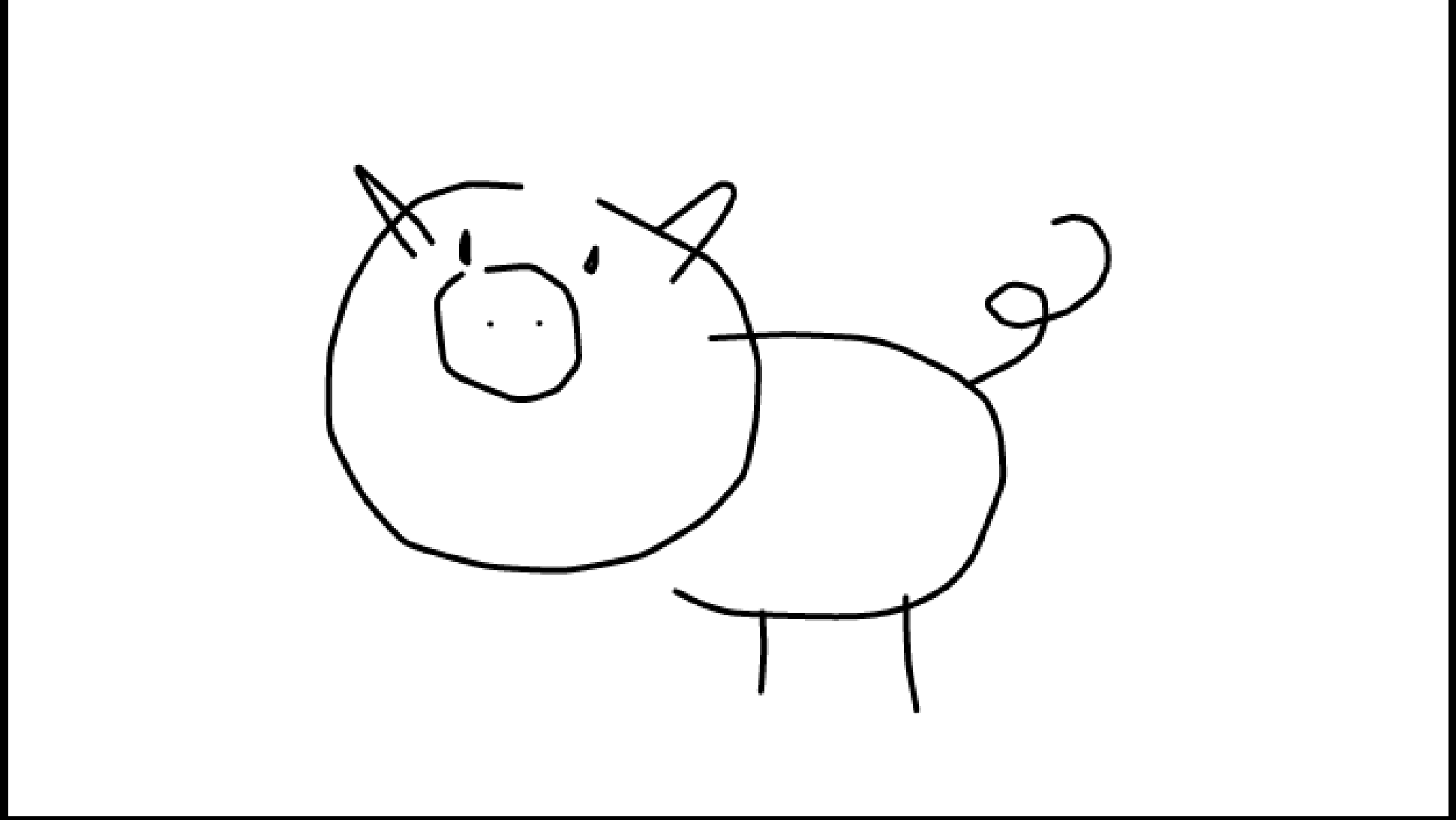
powered by


WTSP

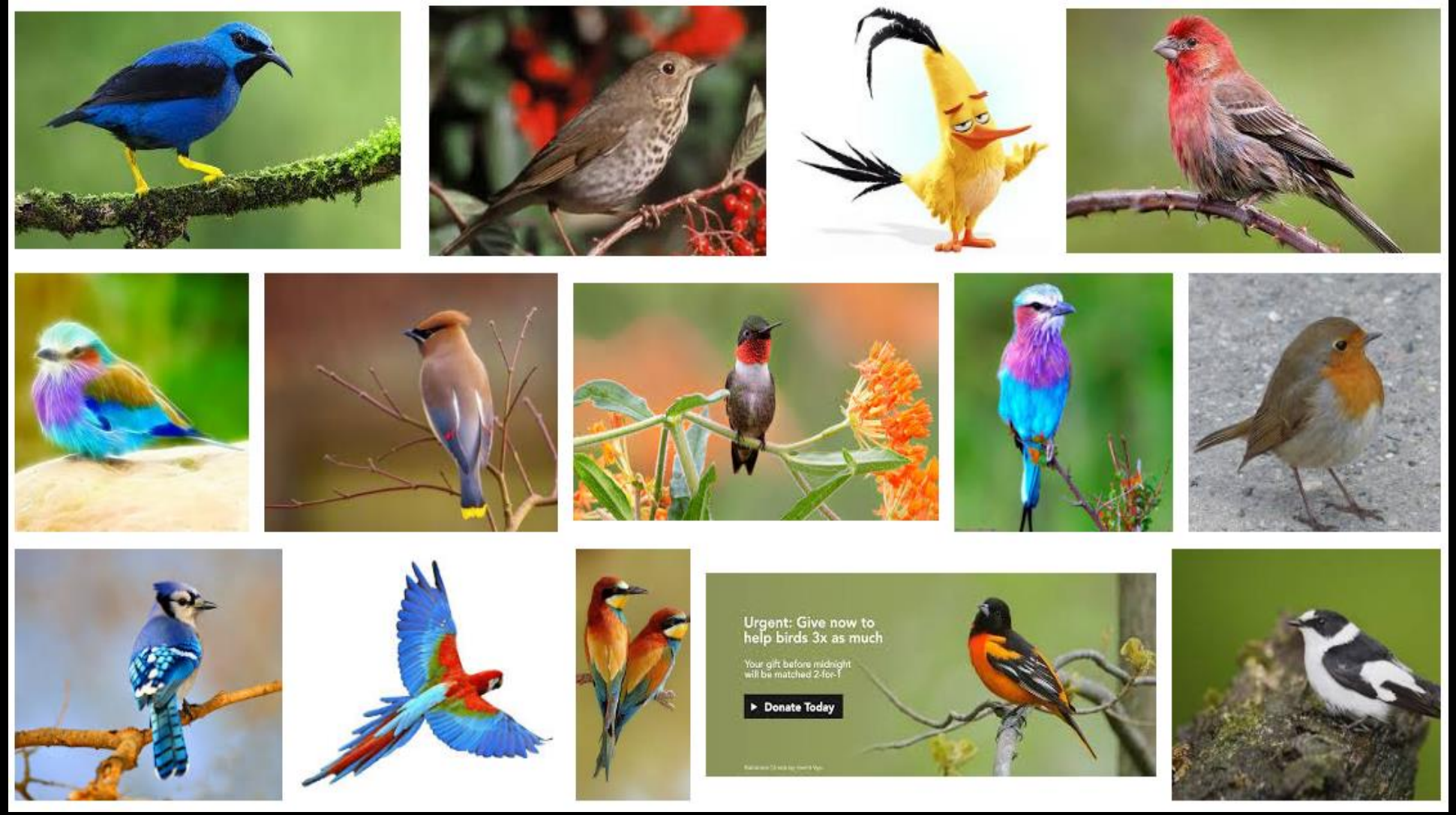

Artificial Intelligence


a car is parked at a stop light

Given an initial still frame,



https://magenta.tensorflow.org/assets/sketch_rnn_demo/index.html



https://aiexperiments.withgoogle.com/bird-sounds/view/


Townhall
THE VIEW
abc

Study Topics for DLA

- Monitoring and Pattern Recognition/Detection from sensor signal, voice, or any kinds of time-seriese data
- Using Deep Learning Models including ANN, CNN, LSTM, GRU, GAN, and etc.
- Keywords: Anomaly Detection(이상감지), Intrusion Detection(침입탐지), Fault Detection (오류감지) with signal/time-series data

Seminar Schedule

Week	Presenter
1 (Mar. 03)	
2 (Mar. 10)	Introduction (Y. Byun)
3 (Mar. 17)	Self-Introduction including personal information, hobby, nationality, attraction in your home town/country, research interests, and/or any kinds of stuff.
4 (Mar. 24)	Prince Wakas(ML Lab.), 차트라지 수바지
5 (Mar. 31)	김용준, 콰윰 파이자, 자파리 사디카
6 (April 07)	오지훈, 임규영, 김재민
7 (April 14)	(Exam)
8 (April 21)	장철희, 허윤경

Seminar Schedule

Week	Subject
9 (Apri 28)	고지영, 응웬 안 뚜안, 사 짐 소 모
10 (May 05)	짠 다이 드엉, 부선아
11 (May 12)	Round #2-1
12 (May 19)	Round #2-2
13 (May 26)	Round #2-3
14 (June 02)	Round #2-4
15 (June 09)	Round #2-5

번호	학부(과)	학번	학년	성명
1	전자공학전공	AI202216001	1	짠 다이 드엉
2	전자공학전공	AM202216002	1	부선아
3	전자공학전공	AD20216006	3	자파리 사디카
4	컴퓨터공학과	AI202216701	1	응웬 안 뚜안
5	컴퓨터공학과	AM202216701	1	고지영
6	컴퓨터공학과	AM202216702	1	사 짐 소 모
7	컴퓨터공학과	AD202126801	2	임규영
8	컴퓨터공학과	AM202126802	2	오지훈
9	컴퓨터공학과	AD20216801	3	김재민
10	컴퓨터공학과	AD20216803	3	차트라지 수바지
11	컴퓨터공학과	AI20216801	3	김용준
12	컴퓨터공학과	AM20216801	3	장철희
13	컴퓨터공학과	AM20216804	3	허윤경
14	컴퓨터공학과	AD20206810	4	콰윰 파이자