Neural Network & it's types

Normalisation & Standardisation
(to be in same specific range)

Inputs — x0=1, b, x1 w1, x2 w2, ... wn, xn

z | f — Linear function, Activation function — y Output

Perceptron

Dendrites, Axon, Nucleus
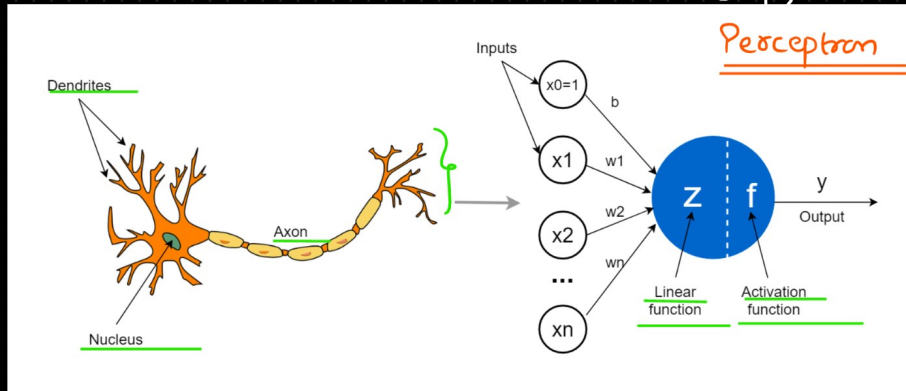
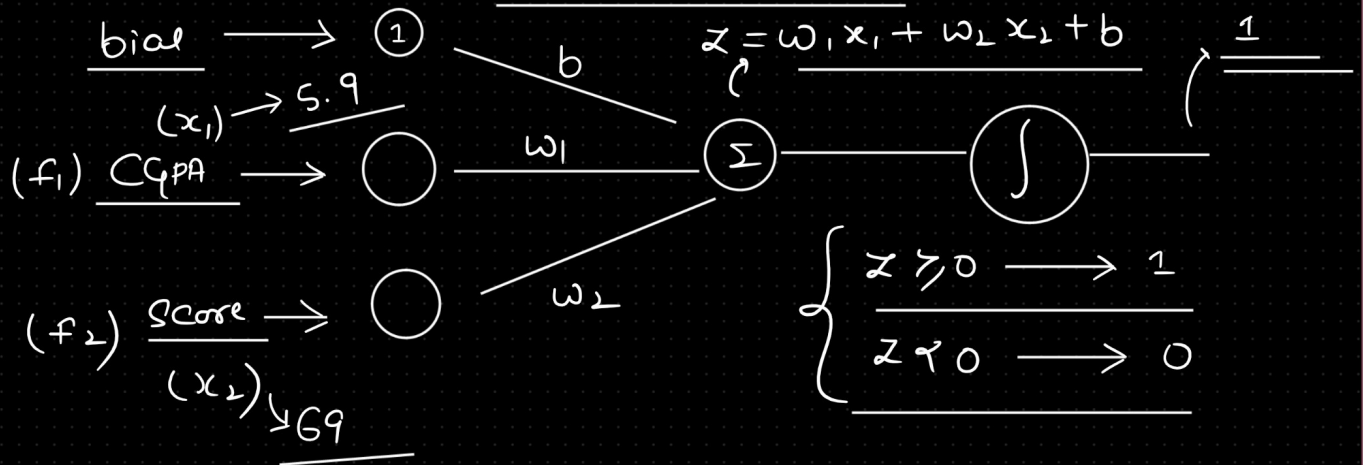① feedforward Neural Network ⟶ Classification & Regression

$$z = \sum_{i=1}^{m} x_i w_i + b$$

↳ Linear function

bias ⟶ ①

(x₁) → 5.9

(f₁) CGPA ⟶ ○ —— w₁ —— Σ —— ∫

(f₂) Score → ○ —— w₂

$$z = w_1 x_1 + w_2 x_2 + b$$

Linear function — $\frac{1}{}$

$$\begin{cases} z > 0 \longrightarrow 1 \\ z < 0 \longrightarrow 0 \end{cases}$$

(x₂) ↳69

Placed
< 1
  0

Yes

No

Non-Linear

Types of activation functions
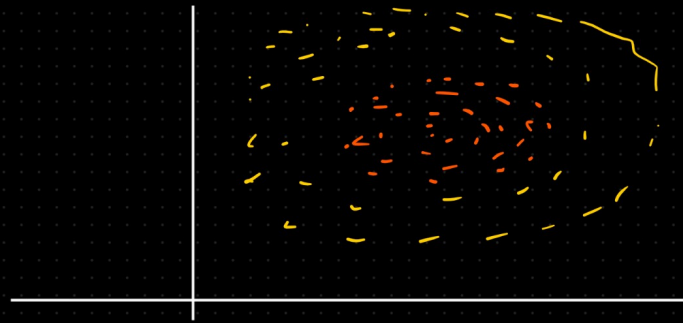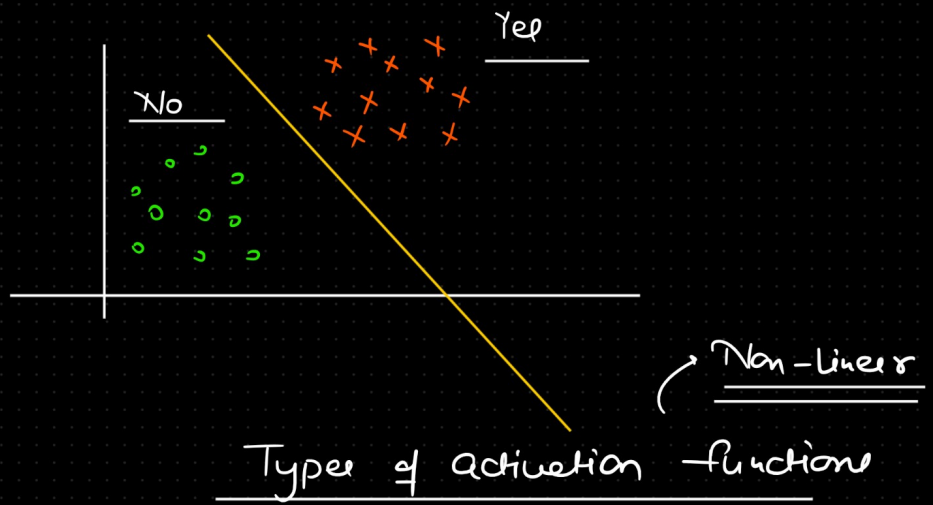
(Doesn't have any memory)

② Convolutional Neural Network — Complex data
  entries

  ↳ grid-like data   SegCaps →
                                               Non
  (Images)   CNN
                              UNET → CNN

Real time application

→ Image segmentation

Cancer
Cell
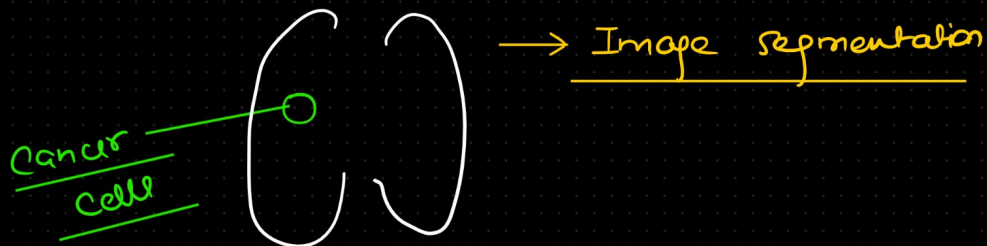
own memory

③ Recurrent Neural Networks of Sequential data

  ↳ LSTM, GRUs

Textual
Data

(NLP)

Time Series

data

Transformers, BERT
↳ ChatGPT

Google Translation

④ GAN (Generative Adversial
                    Networks)
    ↓
synthetic data