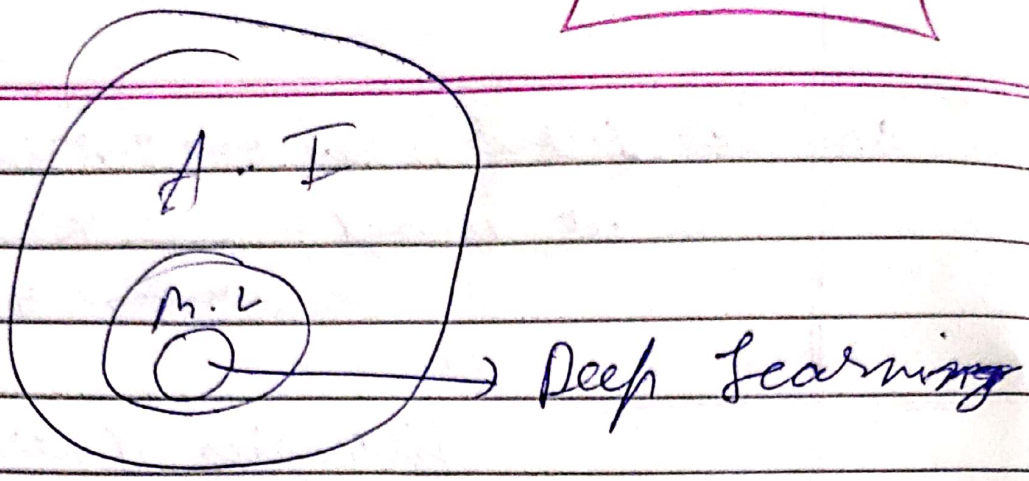

AI provides set of algorithms & techniques to solve problems.

↓

like interpreting & understanding the contents of an image.

Artificial Neutral Networks (ANNs)
Class of ML that learn from data & specialise in pattern recognition

first Neutral Network → 1943
↳ McCulloch & Pitts

↓

binary classifier
capable of recognizing 2 diff. categories based on some input.

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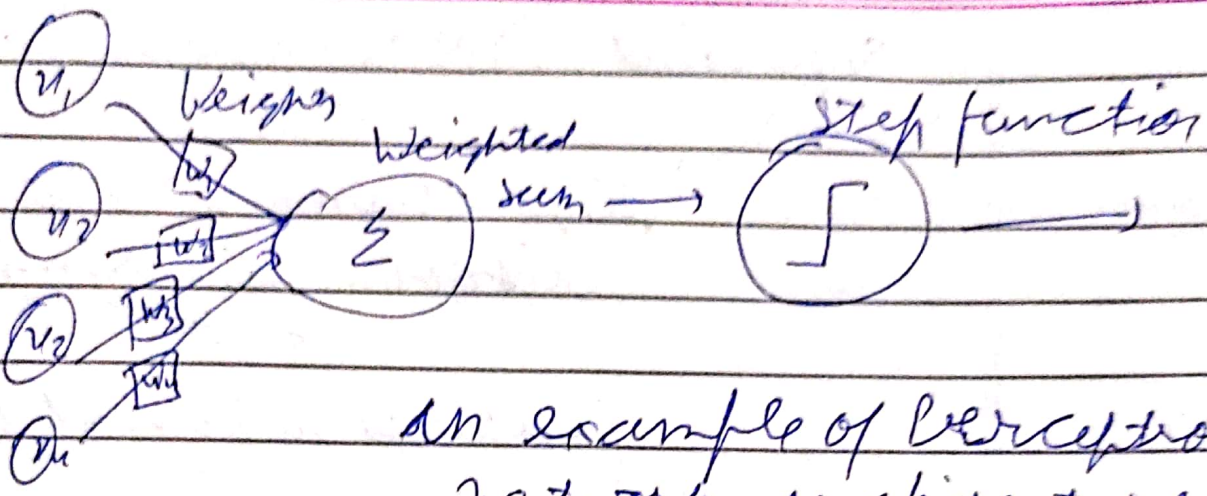

An example of Perceptron network architecture.

ML

↳ Supervised ↳ Unsupervised
↳ semi - supervised

Supervised

∈

Input & output both given

↓

Algorithms then tries to learn pattern that can be used to also. map input data points.

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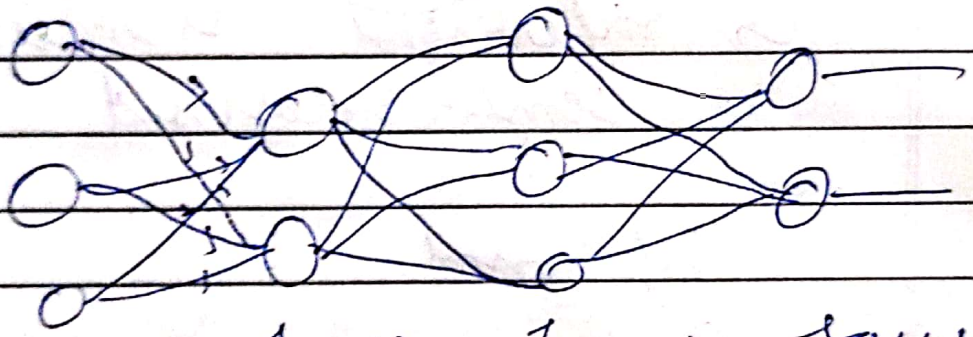
Supervised

Algorithms try to auto. discover discriminating features without hints

feed food network architecture



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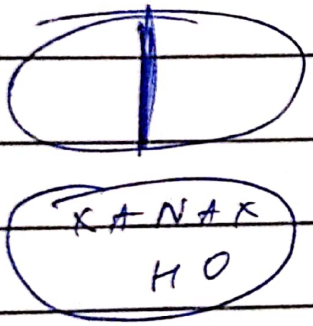
Histogram of Oriented Gradients (HOG)

Example

Quantifying the contents of an image containing a prescription pill medication

↓

color, texture → shape descriptors



→ color image → [0.27 - - -]

→ Texture image → [0.17 - - -]

→ [shape image] → [0.09, - - -]

An algorithm was hard-defined to handle

↳ shape ↳ texture → color etc.

to

input image → pixels → Algorithm → vectors having image contents.

What deep learning do

Pixel intensity values

↓

Convolutional Neural Networks

↓ (Hidden layers)

(to extract features)