The human Brain

Learning is in the Synapses.

McCulloch-Pitts Model of a neuron.

\[ f(x) = f \left( \sum w_i x_i \right) \]

Frank Rosenblatt - "Perceptron" Implement in Hardware as a circuit

\[ \text{stop} \quad - \quad 3\text{-stage function} \]

"Perceptrons" Minsk
- X-OR function
- Computationally expensive.


- Overcomes Linear Separation
Support Vector Machines
- Convolutional Networks (for image input)

"Deep Learning" Networks with a-lot of layers.

GPU = Graphics Video Games:

Google TPU =

Applications: (Learning a function)
- Signal Processing
- Noise from Sound
- Speech Recognition
- Image Recognition
- Character & handwriting recognition
- Walking gait recognition.
- Medicine - diagnose diseases
- Robot Navigation & Localization.

- Advantages
  - Massively parallelisable.
  - Implement them in hardware
  - Any function can be implemented.