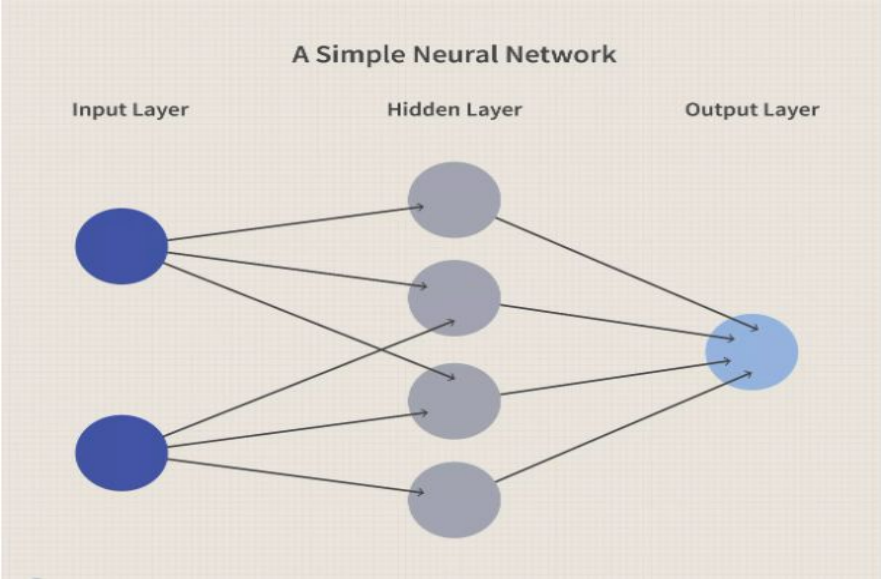
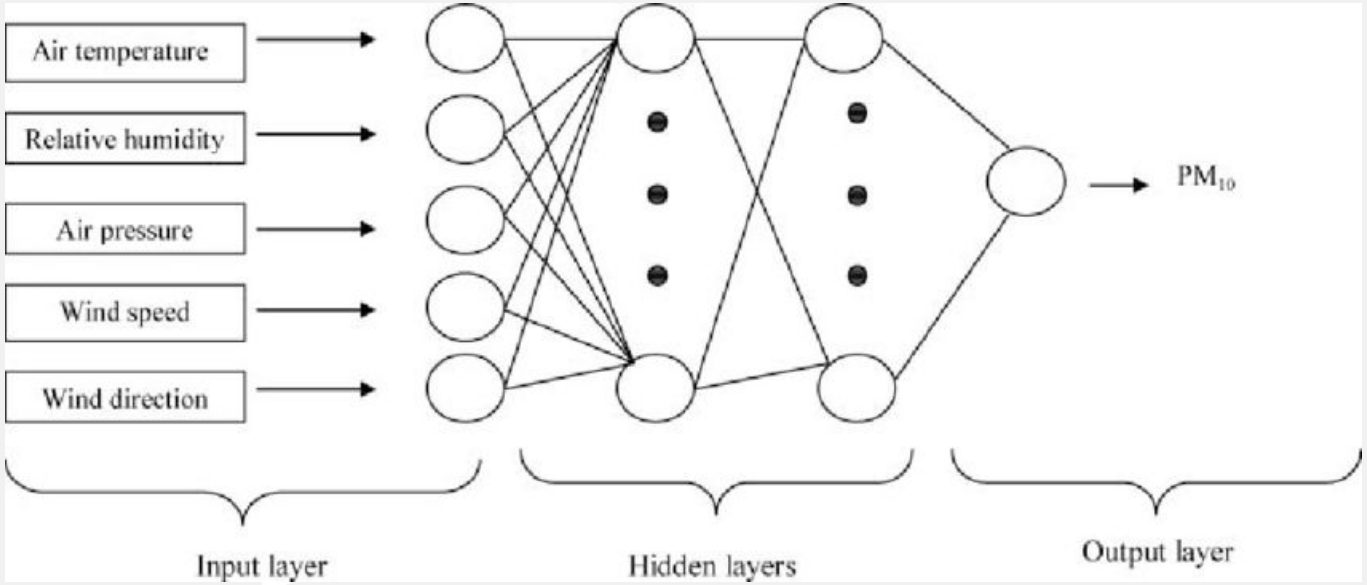
NEURAL NETWORK

brief excursion

What is a Neural Network?

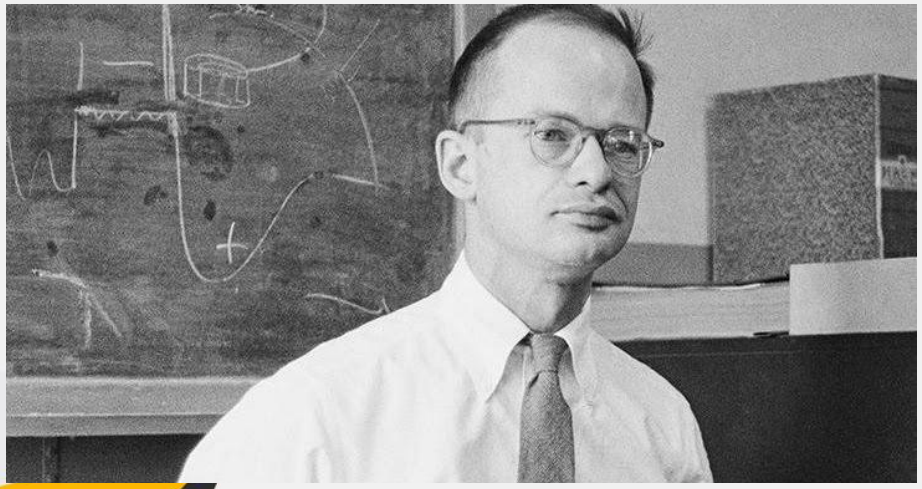
- Neural network is a series of algorithms that endeavors to recognize underlying relationships in a set of data through a process that mimics the way the human brain operates.



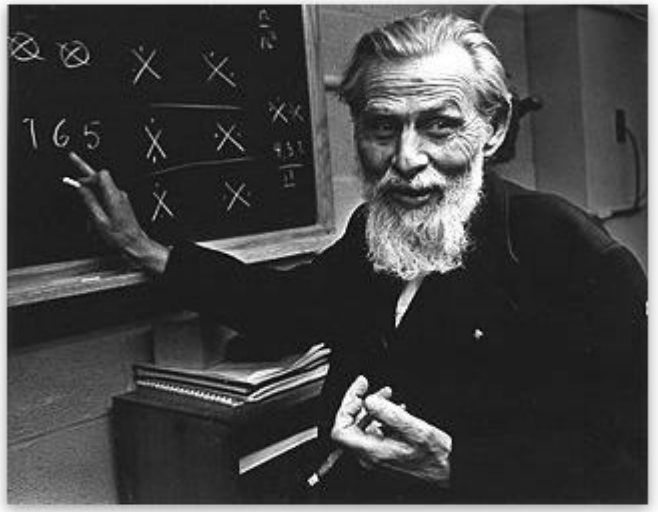


The origin of neural networks

- This technology is not a new invention.
- *McCulloch and Pitts' paper provided a way to describe brain functions in abstract terms, and showed that simple elements connected in a neural network can have immense computational power.*



Walter Pitts (1923-1969)



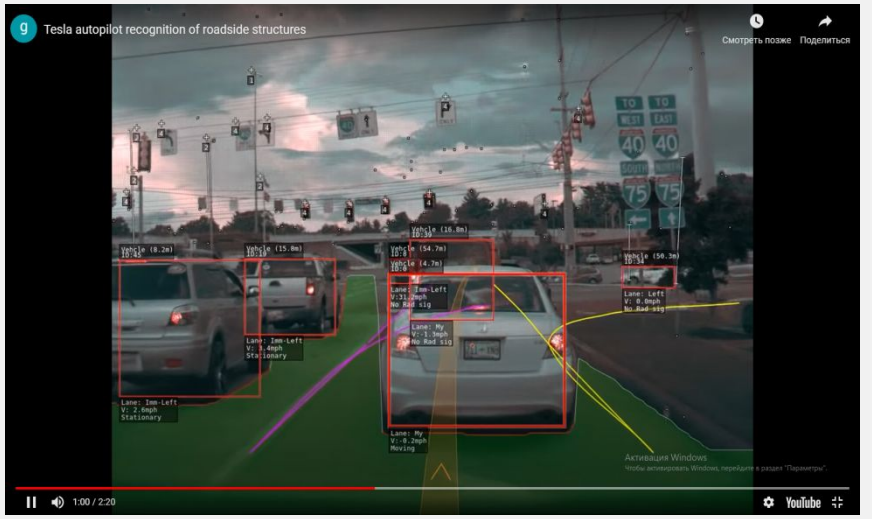
Warren McCulloch (1898-1969)

Incredible opportunities

The use of neural networks opens up amazing possibilities

- Animating images
- Image recognition
- Voice interaction interfaces
- Intelligent security and monitoring systems
- Video analytics systems
- Self-learning control systems for production processes and devices
- Universal translation systems

People created by artificial intelligence

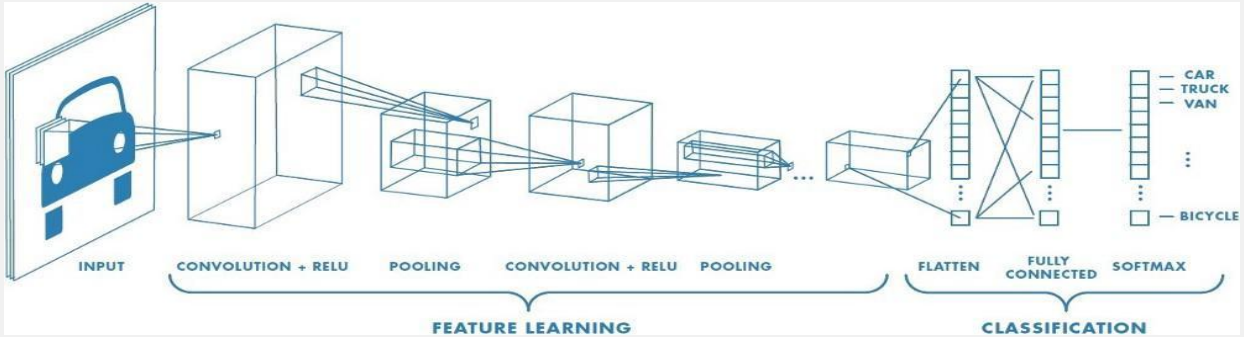


Tesla autopilot system

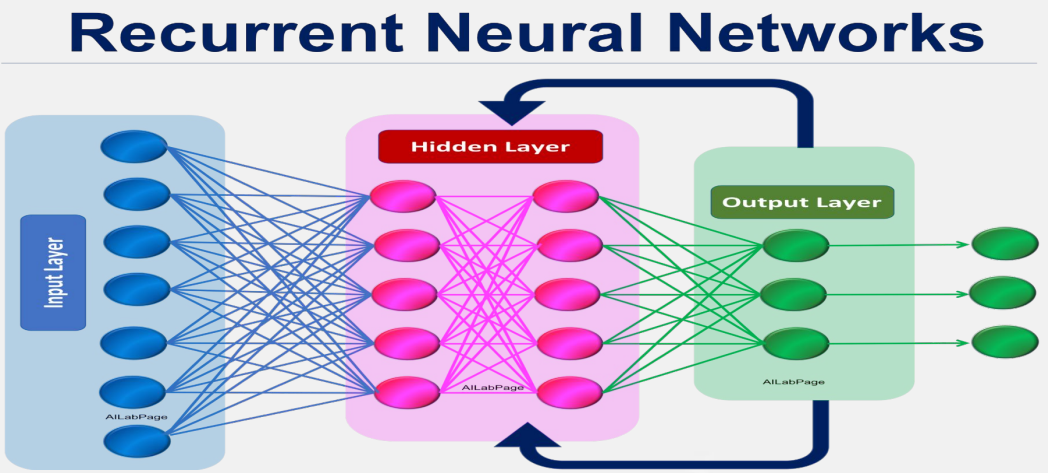
Types of neural networks

- Convolutional neural networks (CNNs) contain five types of layers: input, convolution, pooling, fully connected and output. Each layer has a specific purpose, like summarizing, connecting or activating.
- Recurrent neural networks (RNNs) use sequential information such as time-stamped data from a sensor device or a spoken sentence, composed of a sequence of term.
- Feedforward neural networks, in which each perceptron in one layer is connected to every perceptron from the next layer.

- Convolutional neural network



- Recurrent neural network



- Feedforward neural networks