

## **Understanding Neural Networks:**

- Neural networks are algorithms designed to simulate the functioning of the human brain.
- The effectiveness of these algorithms increases as the neuron size and input data volume grow.

## **Neural Networks vs. Logistic Regression:**

- A simplified version of a single neuron can be likened to the logistic regression algorithm.
- Neural networks consist of layers, with each layer comprising a set of neurons that process similar inputs and yield outputs (input layer and hidden layer).

## **Working Principles of Neural Networks:**

- Neural networks operate by allowing the input layer to pass data to the hidden layer, consisting of multiple logistic algorithms performing specific operations.
- These operations result in activation vectors, which then contribute to producing the final output.
- Activation vectors serve as the bridge between the output of the previous layer and the input for the subsequent one.

## **Inference in Neural Networks:**

- Inference leverages the knowledge gained from a trained neural network model to deduce outcomes.
- Forward propagation involves performing operations sequentially from the left to the right, through the network layers.

## **TensorFlow Platform:**

- TensorFlow is a versatile platform that facilitates the implementation of best practices for data handling, model tracking, performance monitoring, and model retraining.
- Utilizing TensorFlow, tensors can be defined, such as `ts.tensor([[.7]], shape=(,), dtype=)`, akin to `np.array`.

## **Dense and Sequential Functions:**

- The dense function and sequential function are critical components within the neural network framework.