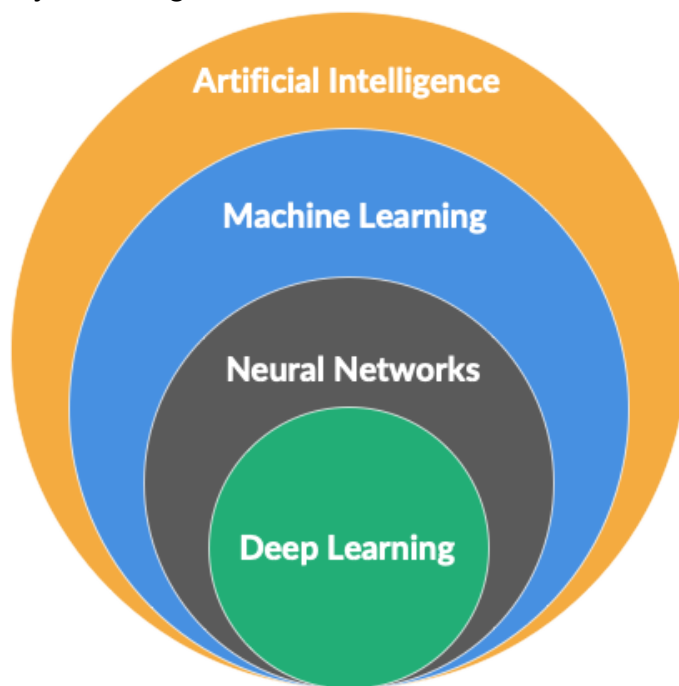


Neural Networks for NLP

What are the main differences between AI, Machine learning, Neural networks and Deep learning?

AI is the idea of mapping human intelligence into a computer. Machine learning is a subset of AI, wherein a computer can learn on its own without human intervention through exposure to data. Neural networks are a subset of Machine learning which simulate the human brain neurons.

Finally, Deep learning is a subset of neural networks where the number of hidden layers are greater.



What are the applications of neural networks?

Some applications of neural networks are as follows:

1. Targeted marketing: Identifying the audience that is likely to buy services
2. Voice recognition: Identifying a speaker and detecting what they are saying
3. Financial forecasting: The process of estimating or predicting a business's future performance
4. Intelligent searching: Using natural language processing to discern meaning and making correlations across data sources
5. Fraud detection: Undertaking a set of activities to prevent money or property from being obtained through false pretenses

What is the difference between the input layer, the hidden layer and the output layer?

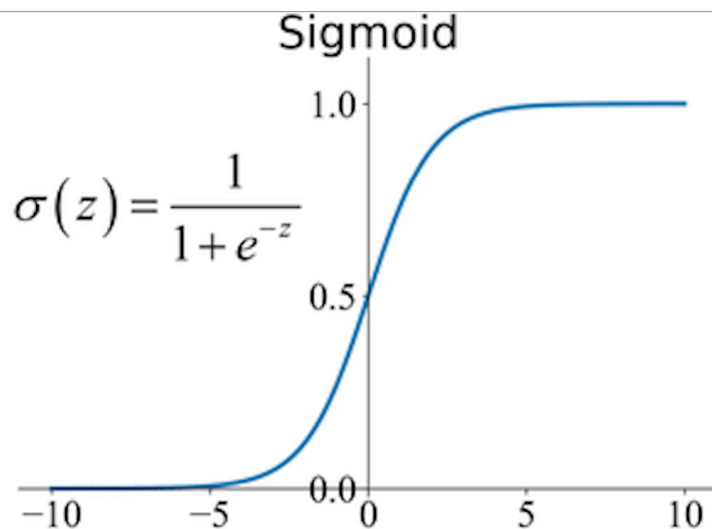
- Input layer: It contains the initial data of the network.
- Hidden layers: These are the intermediate layers between the input layer and the output layer, where all the computation is done.
- Output layer: It produces the result of the inputs.

What are the different types of activation functions?

Binary Step, Sigmoid, Tanh, ReLU and Softmax are the most common activation functions.

What is a sigmoid function?

A sigmoid function is a mathematical function that has a characteristic S-shaped curve when plotted on an x-y plane. It is popularly used as an activation function in the applications of Deep learning.



What are the roles of weights and biases?

Weights and biases are the parameters within neural networks that are changed during backpropagation to minimise the loss.

How does forward propagation work?

Forward propagation implies that the data moves only in one direction, from the input layer to the output layer in a neural network.

What is the difference between an epoch and a batch?

The batch size is the number of samples processed before the model is updated, and an epoch is the number of times all the data is passed through the network.