

Questions and Answers for Neural Networks

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1 What Is the Difference Between a Feedforward Neural Network and Recurrent Neural Network?

A Feedforward Neural Network signals travel in one direction from input to output. There are no feedback loops; the network considers only the current input. It cannot memorize previous inputs (e.g., CNN).

A Recurrent Neural Network's signals travel in both directions, creating a looped network. It considers the current input with the previously received inputs for generating the output of a layer and can memorize past data due to its internal memory.

2 What Is Dropout and Batch Normalization?

Dropout is a technique of dropping out hidden and visible units of a network randomly to prevent overfitting of data (typically dropping 20 percent of the nodes). It doubles the number of iterations needed to converge the network.

Batch normalization is the technique to improve the performance and stability of neural networks by normalizing the inputs in every layer so that they have mean output activation of zero and standard deviation of one.

3 How Are Weights Initialized in a Network?

There are two methods here: we can either initialize the weights to zero or assign them randomly.

Initializing all weights to 0: This makes your model similar to a linear model. All the neurons and every layer perform the same operation, giving the same output and making the deep net useless.

Initializing all weights randomly: Here, the weights are assigned randomly by initializing them very close to 0. It gives better accuracy to the model since every neuron performs different computations. This is the most commonly used method.