The Majority of Deep Neural Networks is Feed Forward is Only One Flow Direction

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Introduction

Computer systems that are modelled after the neural networks that are found in the brains of animals are known as Artificial Neural Networks (ANNs), also known as neural nets or NNs. An artificial neural network, or ANN, is made up of artificial neurons, which are a collection of connected units or nodes that are similar to the neurons in a real brain but not quite there. Each connection has the ability to communicate with other neurons in the same way that synapses in a living brain can. An artificial neuron can communicate with other neurons that are connected to it after receiving and processing signals [1,2].

Description

Connections are represented by edges. As learning progresses, the weight of the neurons and edges typically shifts. A connection's signal strength is affected by its weight. It's possible that neurons have a threshold below which they only transmit when the total signal exceeds it. Deep learning calculations are established by brain organizations, also known as fake brain organizations or reproduced brain organizations. Machine learning is a subset of which neural networks are a component. Models for how biological neurons communicate with one another can be found in the names and structures of human brain neurons. The node layers of artificial neural networks (ANNs) consist of an input layer, one or more hidden layers, and an output layer. Each artificial neuron, also known as a node, has a weight and a threshold that it must meet. A threshold is reached, a node is activated, and data is sent to the next network layer. The subsequent network layer will not receive any data in this case. The majority of deep neural networks are feed forward because there is only one flow direction between input and output. Back propagation, on the other hand, can also be used to train your model; that is, move in the opposite direction from input to output. By calculating and assigning the error of each neuron, back propagation enables us to appropriately adjust and fit the model parameters. There are many different kinds of neural networks, and each one is used for a different thing. Multi-layer perceptrons (MLPs), also known as feed forward neural networks, have been the primary focus of this article. Despite the fact that this is not an exhaustive list, the ones listed below are representative of the most prevalent neural network types for their most common applications. Even though they are referred to as MLPs, these neural networks are actually composed of sigmoid neurons rather than perceptrons because the majority of problems in the real world are nonlinear. Neural networks, natural language processing, and other applications are based on these models [3,4].

Conclusion

Data are typically used to train these models. An ANN is made up of many nodes that look like neurons in the brain. Through joins, the neurons speak with each other and are interconnected. The input data can be used by the nodes for basic operations. The results of these operations are received by other neurons. The idea of biological neural networks in the human brain gave rise to the artificial neural network, a deep learning technique.

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Conflict of interest

The author has nothing to disclose and also state no conflict of interest in the submission of this manuscript.

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