Journal of Information Engineering and Applications
ISSN 2224-5782 (print) ISSN 2225-0506 (online)
Vol.7, No.2, 2017

The Use of Neural Networks in the Cloud Computing Environment

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Abstract
In this research, we will address the relationship between cloud computing using neural networks, which in turn is associated with online services on the basis of cloud computing, such as the infrastructure of the system and access to Internet networks and the use of the communication network in the show cloud computing, but cloud computing for various types of services and applications which used to use the internet using neural networks. Here we will address the resource scheduling strategy, a technology key in cloud computing, which is a service that can be used to send Functions and tasks available resources such as Software and storage systems, as well as the aim is to Enlargement the utilization of The classification of the resources available and assembled together to To reach the top productivity in solving computational problems through neural networks.

Introduction

we are talking in this search for cloud computing, which is a glomus group of connected computers together each other representing the cloud from a variety or complex networks and cloud computing is going one direction between Most of the systems in the network with the help of some of the online networks .

he is a basis of a new model of my account because it is the next-generation technologies and is built on the high speed of the computer with the way it works on the storage and analysis of data and services offered through distributed and Technology computing working on the pooling of resources and Cloud computing is also considered a type of distributed computing.

1 - Cloud computing Characteristics , Service models , kinds of cloud computing .

1 – 1 Characteristics

- **Shared Infrastructure :** And through the use of virtualization software, which allows to try to share the physical storage services and operations, as well as infrastructure to achieve benefit from the infrastructure and it is available in many models of users.
- **Dynamic Provisioning :** provide services the basis of requirements we need through the use of drivers mechanism allowing the expansion of the service as much as we need this dynamic expansion to maintain The highest accuracy levels of security.
- **Network to Access :** In order to access them via the Internet through a wide number of devices such as computers and mobile through the use of the views of programming standards-based applications include the deployment Most of the existing services in the cloud using business applications .
- **Managed Metering :** Here, we will use the measure to manage and improve service and provide reports and information that consumers get the services And it allows for the exchange and dissemination services through cloud computing

1 – 2 : service models

- **(SaaS) :** I have the ability to reach consumers and use applications that are hosted in the cloud, where the information needed to host The importance of the interaction between the service provided as part of the cloud and the consumer
- **(PaaS) :** I have the ability to purchase platforms, That help them deploy their own software in the cloud and access to the network can not be controlled by consumers .
- **(IaaS) :** They are controlling them and control the system through operating systems and most applications and storage space, as well as connect to the network but is not controlled in infrastructure .

We will clarify the cloud computing services in terms of the different actions that vary depending on the client's requirements models. (see Figure 1)

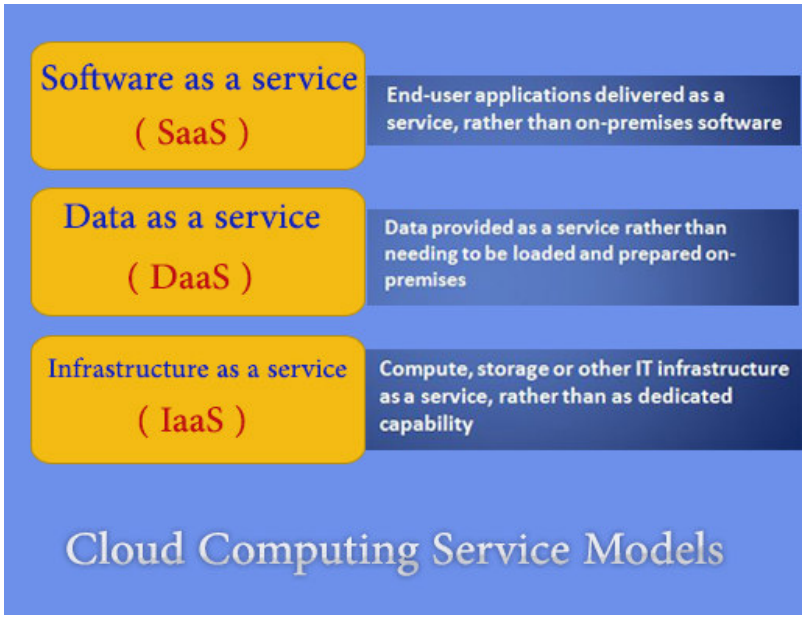

Figure 1 : cloud computing service models

1 – 3 - forms of cloud computing:

- **Cloud of public :** Be available to the public by the intra infrastructure and be on a commercial basis that will allow consumers to spread and develop cloud service but fiscal spending will be very small compared with capital spending .
- **Private Cloud :** The intention here is limited deployment of cloud infrastructure for a Certain facility of this process may be at home with presence of a third party.
- **Community Cloud :** Here are the sharing of infrastructure for many organizations with common interests and this can help to reduce costs and capital expenditures as share of these costs between organizations .
- **Hybrid Cloud :** Here's infrastructure consists of a number of clouds that are working on the composition of the cloud move from cloud to another cloud, and this is a cross between the clouds private and public clouds, which is working to support these data in the organization as well as the provision of services in the cloud .

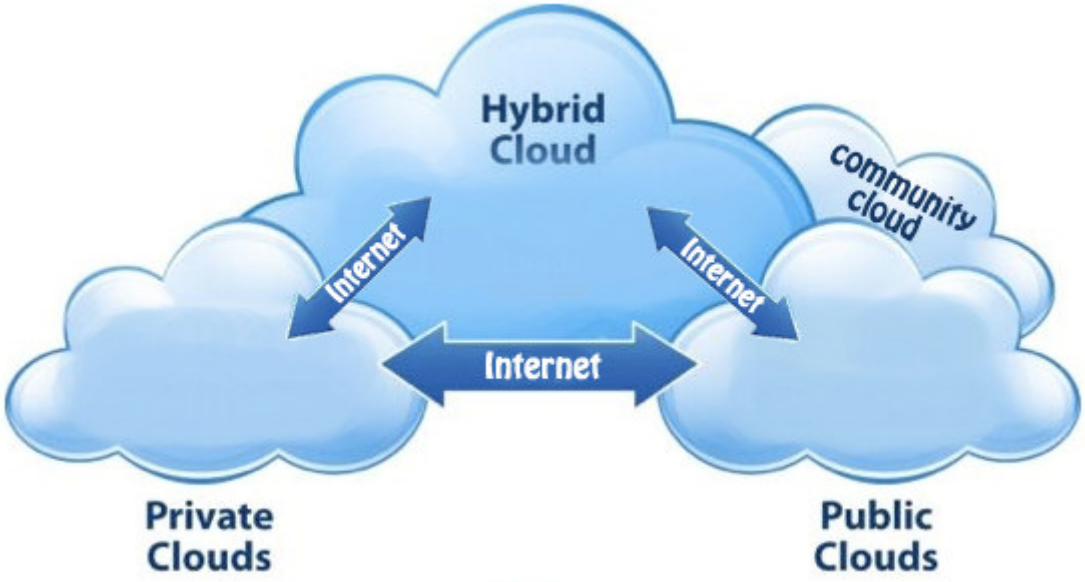

Figure 2 – forms of cloud computing

Moreover consist of cloud computing from the parts which are attached with the other cross the Internet network (Front part and back part) The front part is the user part of the vision, which has the ability to connect

with cloud computing and will also talk about the back which allows all the storage, servers, there are also three different types of cloud computing see Fig. (3) and have to submit the final application for users Using the internet and the software .

Figure 3 – cloud computing architecture

2 – Neural Network Architecture and neuron structure

Artificial neural network is a precise data processing system Characterized by a limited number of interrelated Ingredients with other to form a network .

2 – 1 – Feed forward Networks :

2 – 1 -1 - Single-layer perception :

This network consists of a single layer of weights, where the inputs are connected directly through a series of weights for output and considered this method is the simplest kinds of nutrition network forward and here is calculated total products and inputs in each node to an end.

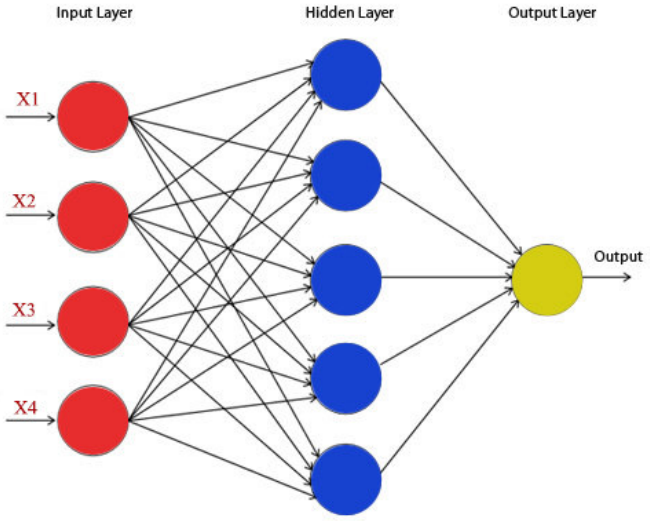

Figure (4) : single layer feed forward perception

2 – 1 -2 – Multi – layer perception :

Multi-layered networks and these networks consist of multiple layers of computational units are interconnected with each other in a manner feed forward every nerve in a single layer and layer Elly followed by the nerve cell layer consists of these architectural and output along with one or more of the hidden layers are known to the unit of account of the hidden layer neurons known as the hidden and And it is accessed layer input and output as well as the hidden layer them .

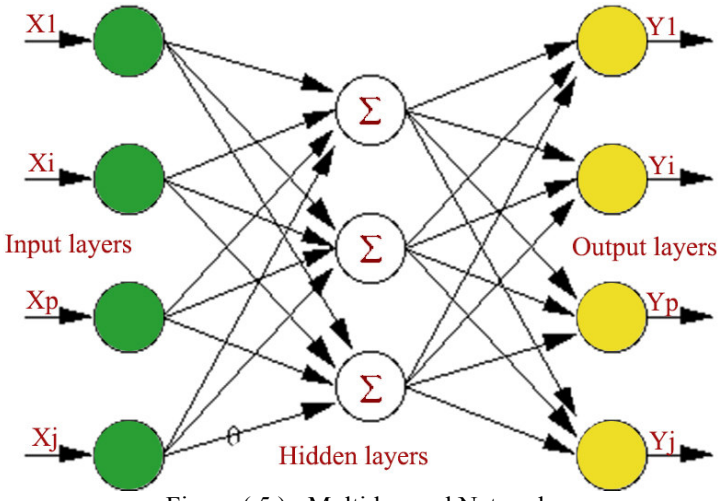

Figure (5) : Multi layered Networks

2 -2 – Feedback / Recurrent Networks :

Recurrent neural networks are featuring it contains at least one of the contacts feedback so that they can activation in the form of rings enables networks to do the treatment timeless and see the sequence of buildings neural networks repeated it could potentially take many forms, including multi-layer forms as a sub-system and can take the form of forms of memory .

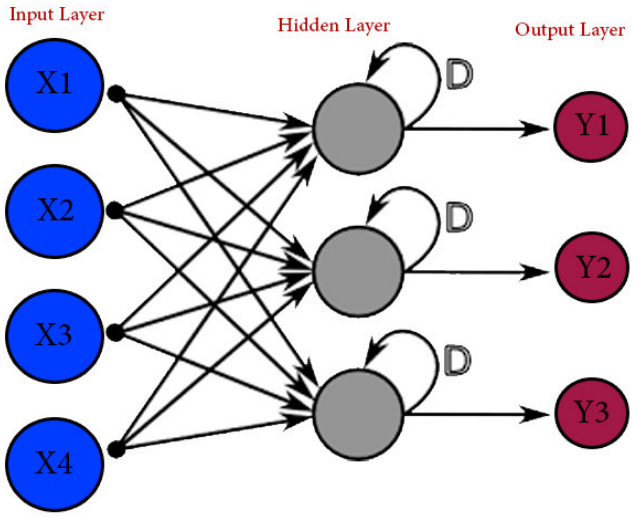

Figure (6) Feedback / Recurrent Networks

2 – 3 - neuron structure

We will talk about the basic structure of the nervous system which neurons are specialized in dealing with these cells of information for the receipt and transmission of information and every part of the nerve These cells have an important role in the transfer of information throughout his body following figure will explain the functions of each part of the nerve cells :

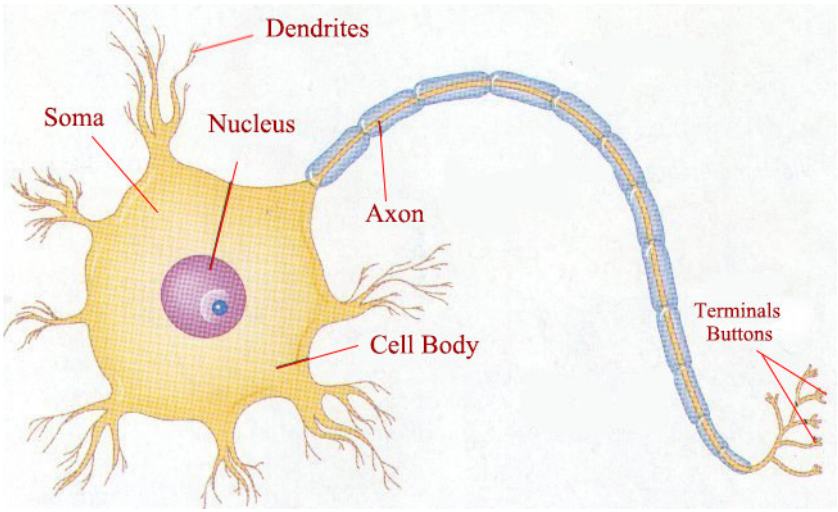

Figure (7) : neuron structure

1 – Axon : Is an extension of the fibers that extend from the cell body to the terminals and the movement of nerve signals and is considered the largest axon and faster it transmits information and covers some of the axons Sticky material called myelin Which represents the insulating material, which in turn is working on the transfer of information faster than other neurons

2 –Terminal buttons : It is found at the end of the nerve cell which is responsible for sending signals to other neurons at the end of these units gap known as neurotransmitters that carry the reference to other neurons .

3 – Dendrites : Is an accessory as in the tree at the forward of the nerve cells Which is working to increase the surface area of the body of the cell and these cells are covered with a layer of synapses and that small depressions working on information received from the nerve cells and the movement of electrical stimulation

4 –Soma : Where are linked to signals from the dendrites, transfer and Soma and the nucleus does not play an important role in the transfer of nerve signals Instead of these two structures is working to maintain the cells and maintaining the function of neurons, including support structures of the cell mitochondria, which is working to save energy for the cell and the device that creates through cell and secreted them out of the cell wall .

In fact neural networks have been designed in an attempt to simulate the human brain in ways of implementing the tasks or functions specified is the most important advantages are the nature of the adjustment to solve problems of complex systems or ambiguous are They are trained neural networks on different ways of using learning rates of spread and Through the changing relations between the layers of input and output . the performance of networks in terms of how many layers and As well as how many training algorithms are trained neural networks repetitive and recombination and selection of fitness even put minute chromosomes with neural networks. The neural networks are trained to collect specific information and can predict the new status of the chromosomes and are suitable for the establishment of production At the end of training were the output layer and can make the best use of neural network structure with well-chosen set of inputs and a set of training results The use of neural networks on a large scale for the identification, classification and prediction by studying hundreds of neural networks to disclose Over the thread relations in the information is the most important of using neuralof the networks are learning adapting to situations and provide him with processing on a large scale without the full information about and dealing with a huge amount of information and variables .

Finally, can the neural network classification of new entries on the spot, which have never been seen before as a genetic algorithm to find an acceptable solution within the space would be the best solution as a result of the use of neural networks in the cloud computing environment through the creation of a set of categories on the basis of the tasks given to them so they can achieve the advantage of the use of neural networks in the cloud computing environment .

Results

Cloud computing is considered one of the most interesting topics in the shops of scientific research and he will help to reach a most utilization of the available resources to reach the top of productivity and he can Processing the problems on a domain large and considered the use of a single neural networks of the key in most areas of cloud computing and the main task of neural networks to explore the best available resources in the field of cloud computing, researcher importance of neural networks in the cloud computing environment and most uses artificial intelligence techniques to explore the optimal allocation of these resources is based on this method is to use a neural network to classify the waiting lists function present on any resource and prioritize different functions because you can find and break up the model and the role models can adapt to explore the knowledge and new concepts using neural networks to solve them to improve it in the cloud computing environment .

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