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AGENT BASED OPERATING SYSTEM A NEURAL NETWORK APPROACH

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ABSTRACT --- Operating systems are highly necessary piece of software, but with the introduction of cloud computing, distributed systems and multicore systems, traditional operating systems are suffering big time. Proper utilization of the resources available to the operating system is the highly preferred quality. This paper discusses an approach to extend the traditional operating system to incorporate the artificial intelligence to extend its impact.

Keywords --- ABOS, Neural Network, OS.

I. INTRODUCTION

Extensibility and feasibility of the operating system are the highly needed characteristics that are needed for the acceptance of the new behavior is highly required. In this paper we discuss the agent based approach that implements the neural networks to extend and increase the flexibility of the operating systems.

II. AGENT

It is an independent piece of software that acts on its environment and perceives it. The agents used in our system are code dependent and have strings of code as the programs and actions.

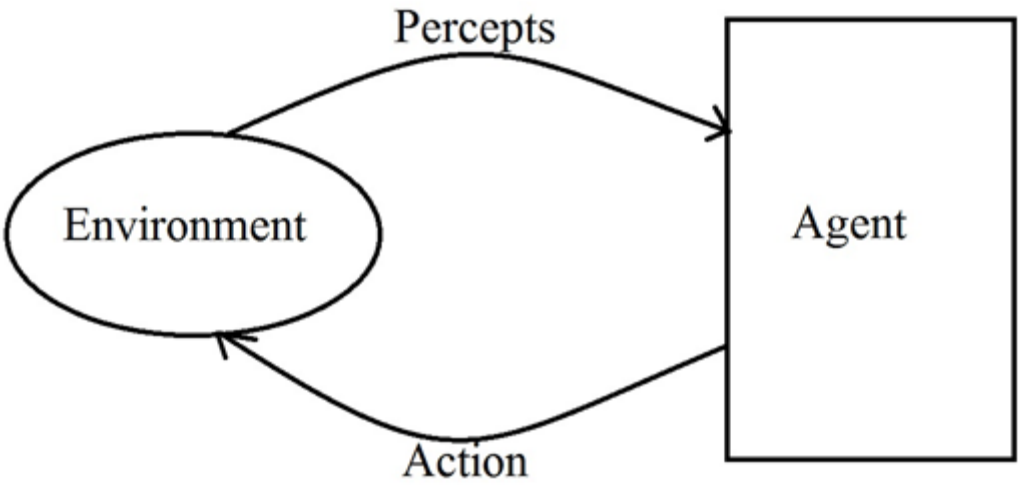

Fig 1: Agent

III. AGENT BASED OPERATING SYSTEM

Agent based operating system is a type of the operating system that works using agents as its basic building blocks. Here a set of basic comprehensive agents are created that act as kernel of the all the other functionality that an operating system should provide are also provided by agents.

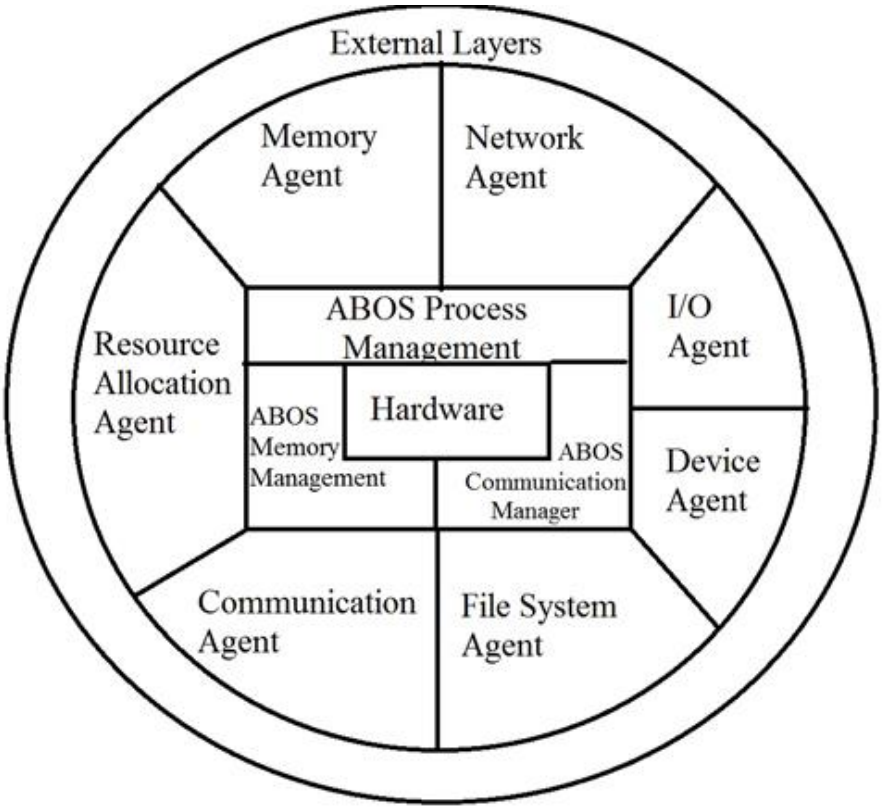

Fig 2: Agent Based Operating System

IV. NEURAL NETWORK BASED APPROACH

The basic idea of this approach is to implement each agent as a part of a modular neural network and differentiate different layers of the operating system at each level. Core acts as a basic point in the system and has components that an absolutely necessary to the internal working of the system while working with the hardware.

Kernel acts as a path way that is used to accomplish certain various functions that the system provides to the upper layers.

Modular neural networks, it is a combination of various neural networks each of the inbuilt neural network has a specific function and works for a specific component [1].

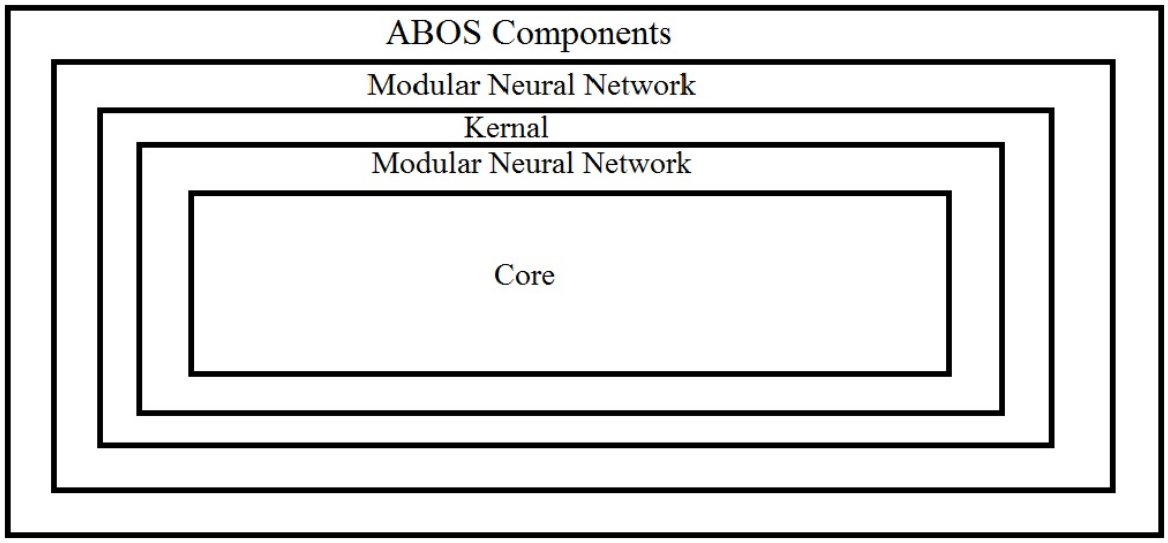

Fig 3: Neural network based ABOS

V. WORKING OF THE NEURAL NETWORKS FOR THE SYSTEM

The working is a two-step approach:

Step 1: This step involves the basic processing by the respective agents for a particular functionality.

Step 2: to interact with the inner layers agents interact with their specific neural networks. The neural network takes the advantage of the inner layers of the operating system and does the proper processing required by the task and give the output back to the respective agent.

VI.CONCLUSION

The idea of using a neural network creates a level of abstraction at each level and the result of using neural network helps to extend the functionality and the flexibility of the operating system as each level is independent of the other and can be changed as per the requirements without affecting the inner layers of the system

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