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ARTIFICIAL INTELLIGENCE

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Abstract: *This paper presents a new perspective of Artificial Intelligence (AI). Although, number of attempts has been made to make an artifact intelligent, including evolution theory, neural network etc and a number of problems have been solved using these concepts but each of this theory covers only some aspect of human intelligence. Still there is a large gap between artificial intelligence agent and human being. In this paper, we outline the technical issues that need to be addressed in order to meet this challenge, including usability, robustness, and scale. At the same time it adds the power of two well knows Artificial Intelligence techniques viz. Neural Computing .The paper gives an idea of an artifact which is supposed to match the intelligence and behavior of a human being. Paper also discusses some natural phenomenon and how they can be confirmed by the revised definition of artificial intelligence. The paper does not claim that existing definition of artificial intelligence has some faults. The paper just augments the existing definition by some other features that can make it more close to natural intelligence. The features augmented are naturally inspired similarly as AI, Neural Network and genetics all are naturally inspired.*

Keywords: *Neural Computing, Intelligence*

1. INTRODUCTION

Artificial Intelligence (AI)

Although, artificial intelligence is a very general term but defining it precisely is very difficult. And the design of an artificially intelligent agent totally depends on the fact how we define the term Artificial Intelligence‘. Possibly, the right definition can lead us to develop a successful intelligent artifact. There are a number of definitions to define artificial intelligence. As discussed in [1] the successful definitions are along two dimensions: firstly, whether it is with respect to reasoning (thought) or behavior (action) and secondly, whether it is with respect to human or ideal (i.e. rational) .An important goal of artificial intelligence research is to devise machines to perform various tasks normally requiring human intelligence proving mathematical theorems, learning to translate languages, playing good games of chess and learning to improve its performance are few of the kinds of things such as machine is expected to perform.

AI is a broad topic, consisting of deficient fields, from machine vision to expert system. The element that the field of AI has in common is the creation of machines that can “Think”. In order to classify machine as thinking it is necessary to define intelligence. To what degree does intelligence consist of for example solving complex problem or making generalization and relationship?

Definition of Artificial Intelligence System can be divided into four categories.

1. System that thinks like human
2. System that think rationally
3. System that act like human
4. System that acts Rationally

Figure 1. Artificial Intelligence

2. ARTIFICIAL NEURAL NETWORK

ANN is a computational structure designed to mimic biological neural networks. It consists of computational units called neurons, which are connected by means of weighted interconnections. The weight of an interconnection is a number that expresses the strength

of the associated interconnection. The main characteristic of ANNs is their ability to learn. The learning process is achieved by adjusting the weights of the interconnections according to some applied learning algorithms. Therefore, the basic attributes of ANNs can be classified into Architectural attributes and Neuro dynamic attributes. The architectural attributes define the network structure, i.e., number and topology of neurons and their interconnectivity. The neuro dynamic attributes define the functionality of the ANN.

But, despite of successful implementation of ANN in solving various problems, if we consider it from the perspective of artificial intelligence it lacks one very important aspect of human brain. The aspect is, after finishing the learning a neural network gives the same output to same input without referencing the current context unlike human brain that takes decision according to the problem as well as according to the context (here context means emotional state) the problem arose in. If we talk about human brain, it takes the decision depending upon the current conditions (sensed by five senses), experience and state of mind (something related with emotions). While, if we talk about ANN, it takes decision on the basis of current conditions (as in human brain) and training quality (somewhat similar to experience) only. It does not take emotions into consideration while taking a decision. Think about a human being without emotions. Now following are some question that will help us to realize the importance of Emotions in an intelligent agent: Is there any relation between intelligence and emotion?

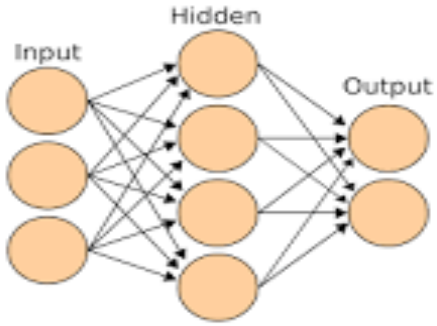

Figure 2. Artificial Neural Network

3. CHALLENGES

1. Knowledge Representation: Knowledge representation and knowledge engineering are central to AI research. Many of the problem Machines expected to solve will require extensive knowledge about the world. Among the things that AI needs to represent are:object,properties,categories and relation between objects,situations,event ,state and time, causes and effect, knowledge about knowledge (what one knows about what other people know) and many other, less well researched domains.

2. Usability. The exploitation of distributed heterogeneous resources is already a hard problem, much more so when it involves different organizations with specific use policies and contentions. All these mechanisms need to be managed, and sadly today the burden falls on the end users. Even though users think in much more abstract, application-level terms, today's Grid users are required to have extensive knowledge of the Grid computing environment and its middleware functions.

3. Robustness. Failures in highly distributed heterogeneous systems are commonplace. The Grid is a very dynamic environment, where the resources are highly heterogeneous and shared among many users. Failures can result from the common hardware and software failures but also from other modes where the policy usage for a resource is changed making the resource effectively available.

4. CONCLUSION

More declarative, knowledge-rich representations of computation and problem solving will result in a globally connected information and computing infrastructure that will harness the power and diversity of massive amounts of on-line scientific resources. Finally, although there is no formal proof of the concept I have introduced in this paper, I have realized them by explaining some natural phenomenon. And since, these are nature inspired computing they must be able to confirm maximum possible natural phenomenon.

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