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A Multi Agent Cognitive Theory

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0. Introduction

A multi agent cognitive theory abbreviated by AMAC is being defined . The present cognitive theory proposed the following. Neurons Are Microcomputers Nourani (1991). A neuron might be modeled by a microcomputer composed of thousands of atomic components. Thus a neuron is itself capable of a form of computation. Specialized neurons might compute certain functions in the most efficient manner. Thus the human mind defines a very complex multiagent computing phenomenon. The microcomputers communicate by message passing agents. Each neuron is capable of some form of computation and capable of message communication. The messages could be coded in a form that is not visible to the present day simplistic models of brain. Genetic algorithms are based on hypotheses which indicate the present theories are not far fetched.

1. Multi Agent Active Learning

A Multi Agent Computational Logic is being defined by this author's intelligent tree computing project. A basis for a theory of computing with intelligent languages and an intelligent model theory is presented in Nourani(1994) which might alter the way artificial intelligence logical theories and the computational linguistics logic is viewed. We present intelligent syntax and put forth intelligent tree completion theorems and techniques for defining and generating an intelligent model theory for active learning agents based on tree intelligence. Thus the interplay between syntax and model theory at abstract intelligent syntax trees might be a new area for logic, cognitive science and computational linguistics.

2. Intelligent Trees

By an intelligent language we intend a language with syntactic constructs that allow function symbols and corresponding objects, such that the function symbols are implemented by computing agents in the sense defined by Nourani (1993). A set of function symbols in the language, referred to by Agent Function Set, are function symbols that are modeled in the computing world by AI Agents, see Genesereth and Nilsson (1987), for example. The objects, message passing actions, and implementing agents are defined by syntactic constructs, with agents appearing as functions, expressed by an abstract language capable of specifying modules, agents, and their communications. We have to put this together with syntactic constructs that could run on *Intelligent Tree Computing* theories Nourani (1993,94).

3. Genetic Algorithms And Cognition

The genetic algorithm progress towards problem solving was is another reason to look for an alternative cognitive theory. The biological theories reported in Science by Bloom et.al. (1992) at the Scripps Institute reported brain cells can both secret and and take up RNA and are able to communicate with one another by genetic material exchange. It has been long known that brain cells communicate by neurotransmitters and by electrical impulses. Cellular Automata, put forth by John Holland, the Minsky-Pappert Perceptrons, and the Neural Net computing are example starts. Further biological theories report on brain cells with spontaneous computing behavior by Allman in NY Times (1993) responding to specific shapes like lips, angels, motion or leaves. The Double Vision Computing Paradigm Nourani(1993) is a preliminary theory and a problem solving paradigm for multi agent visual cognition.

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