ARTIFICIAL INTELLIGENCE AND ITS EFFECTIVE NETWORKING FOR EARLY STAGE BREAST TUMOR DETECTION

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ABSTRACT

This paper reports regarding intelligence which is applied to network routing. During the course of study intelligence has been discussed as massive system of scalability, emergent behavior from low complexity, local interactions, autonomy and communication with the means of environment. Artificial Intelligence is the best technology which opens a new door to understand that, what is an intelligent entity? In this presentation, artificial intelligence has been discussed to understand ourselves the symptoms of cancerous breast tumor.

KEY-WORDS

Routing, Intelligent entity, Artificial intelligence, Networks & Breast cancer.

INTRODUCTION

In the growing age of science and technology, communication systems and networking have become an integral part of human beings. As, we are living in the age of information technology, we are required sophisticated communication systems. But, today we have to face so many problems in communication routing. Therefore, the routing algorithms came in modern network. The matrices of a network are average throughput and delay, which have two usual performances. Interaction of matrices are jointly optimized between routing and flow control. A flow-control scheme has good routing results. It is balance of the delay and more favorable [1]. It is another important performance measure of the Quality of Service (QoS) guarantee [2-3]. Biological swarms of certain insect species appear Artificial Intelligence. Through complex interaction of thousands of autonomous swarm members give rise to complex and often intelligent behavior. It is based on primitive instincts with Interaction and no supervision. Social behavior is an accomplishment of very complex forms of end result that, fulfillment of a number of optimization and other tasks [4-5]. Therefore, this paper explains an artificial intelligence and its influence on communication systems.

ARTIFICIAL INTELLIGENCE (AI) AND COMMUNICATION

In this section, the probabilities of the routing tables are updated as the ant visits the nodes, based on the ant's life at the time of the visit. The life of the ant is the sum of the delays of the nodes. It is given by

$$T = \sum_i D_i \quad \text{---------- (1)}$$

The delays D_i are given as: $\mathbf{D_{i=}\ c.e^{-d.s}}$ ---------- (2)

Where S is the spare capacity of each node and, c *and* d are design parameters in the telephone network. Then a step size is defined for that node, according to:

$$\delta r = \frac{a}{T} + b, \quad \text{---------- (3)}$$

Where a and b are both design parameters. This step size rule is chosen heuristically. It assigns a greater step size to those ants that are successful at reaching the node faster. The routing table is then updated according to:

$$r^i_{i-1,s}(t+1) = \frac{r^i_{i-1,s}(t) + \delta r}{1 + \delta r} \quad \text{---------- (4)}$$

$$r^i_{n,s}(t+1) = \frac{r^i_{n,s}(t)}{1 + \delta r}, n \neq i-1 \quad \text{---------- (5)}$$

Where s is the source node, i is the current node and i-1 the previous node.

A	B	C
E	0.65	0.35
F	0.55	0.45

Table-1 ABC Routine Table

For example, in Table 1, if the source is node F and the destination is node E, then the ant will update the row for F and use the node for E to find the next hop. It works as both sided moving ant like, forward and backward. The update rules are such that the condition:

w = $\sum_{n} r^{i}_{n,s} = 1$, here *n* is all the neighbors to *i*, is satisfied. ---------- (6)

For this algorithm, the interesting part of improvement is based on Bellman's principle of dynamic programming. Every node in the path J^k of a source-destination pair *s-d* is considered a destination. The back-propagating agent will update the routing table of a visited node *n* not just for the destination, but also for the intermediate nodes. Hence the updates occur all at once. For example, on node *n* in Fig. 1, the backward agent will also update the entry for node s_1 as follows:

$$D^{n}_{s_1,s_1}(t) = (1-\eta)D^{n}_{s_1,s_1}(t-1) + \eta d^{k}_{n,s_1} \quad \text{---------- (7)}$$

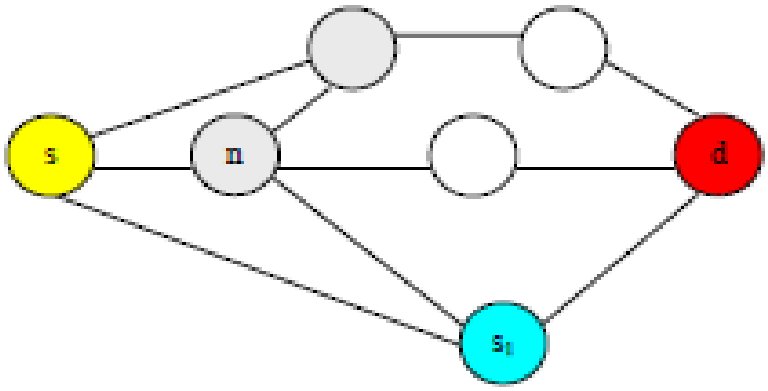

Fig. 1 Multiple Trip Routing Example

CONCLUSIONS

The routing algorithms can be simulated for matrices of heterogeneous dielectric constants of the malignant area of the breast cancer. It may have two usual performances. The Interaction of matrices are jointly optimized between routing and flow control.. It makes balance of the delay and becomes more favorable to predict the early stage of breast tumor. Thus ,it becomes an important performance measure of the Quality of Service. The complex interaction of autonomous swarm members give rise to complex and often intelligent behavior including the very complex forms of end results. The properties are desirable for different type of networks. The swarm intelligence based approaches are solving numerous problems of adhoc power aware networks.

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