International Journal of Advance Research in Science and Engineering
Vol. No.5, Issue No. 05 , May 2016
www.ijarse.com
IJARSE
ISSN 2319 - 8354

# A REPRESENTATIVE BASE SIMULATED LIFE AND HUMANIZED PRECEPTOR SYSTEM

**Anirudh Kumar Tripathi[1], Dr Dheeraj Chooramani[2]**

[1,2] *Department of Computer Science & Engineering,*
*IIMT Engineering college,Meerut, (India)*

**ABSTRACT**

*In this paper the significance of performing a population-dynamics examination to advance the outcomes achieved utilizing agent based simulated llife has been exploited. The outcomes achieved can be utilize to manage the population extermination via altering the original circumstance or constraint. It has been confirmed via contributing a realistic sample based on routing-algos. In this paper we as well concentrate on animals understanding system & quick growth of bionic-sensors, it is probable to learn intellect preceptor based on simulated life. The idea of humanized preceptor is described & function structural design of humanized preceptor is recognized.The newest advancement of the field of simulated life have also been discovered. Depend on the idea of simulated life, unitewith genetic-algo, the elective experimentations in 2-dimensional grid surroundings & 3-dimensional MG1S surrounding have been deliberated.*

***Keywords: Operational Experiments, Preceptor, Humanized, Population-Dynamics, Simulated Life.***

## I. INTRODUCTION

The guideline of simulated life was born in the US in Nineteen Eighty Seven at the first simulated life workshop. Chinese society of simulated life intelligence in Two Thousand Two hosted the first session of simulated life and application of special academic conferences expanding the extent of study of simulated life, simulated life research specify that china has go into in new era will be more broadly used in china's natural and social sciences in a variety of areas. The intelligence is a synthesizing capacity of the person goal behavior, the sensible thought and effective adaptation to environment and it is also an ability of the person to know the objective things and solves the questions using the knowledge [8]. simulated life simulates a natural phenomena from which the mechanism and methods be able to be refined in general with simulated intelligence model adapt a system structure from the top to the bottom, carry out the centralized manage and the decision making process is influenced by the overall condition.

While the examination of interactive process between human and the environment we discovered that human admits the outside in order to using five senses of vision, hearing, smell, taste and touch[8][11].

In this examine of simulated life, external sensors which may keep up a correspondence to human five senses and attach external environment and the simulated life are the window of gathering the information and it will be one of the most important problems of simulated life how to carry out synthesis processing to get the accurate

environment information from the gathered information by using the appropriate method. At present, the research on "simulated life" can be separated into simulated eye, simulated nose, and simulated ear. simulated life not only has made enormous advances and a number of has already became products, but also has the very big difference compared with function of humans feeling organs[8][3]. For example, the environment resource input rate, life cycles, energy substitute between agent and environment, etc[10]. At this spot, some questions occur: in case that our system does not reach a steady state, how could we conclude whether the system is not converging – extinctions, or oscillating behavior - because the agents are not able to adapt -learning problems- or because the parameters selected make the system unsteady? Is the grouping of parameters we have selected forcing the system to a fixed solution in terms of number of agents and resource-related parameters? Can we alter the balance point to obtain different solutions to the problem? To answer this type of questions, we have modeled the relations among the energetic variables in the system and deliberate how they concern the balance, this is, and we have analyzed the population-dynamics of the system.

All the engineering problems necessitate compound optimization procedures. These complete procedures or approaches utilize representative base simulated based models in the optimization of a objective function. Our effort is more focused in the appearance of optimization algorithms instead of optimizing particular function. In this paper we have developed and tested a method to solve engineering optimization troubles using an representative base simulated life system. For example, the environment resource input rate, life cycles, energy substitute between agent and environment etc. [4] [5][6].

Chinese Society of simulated Intelligence in Two Thousand Two hosted the first session of the simulated life and application of unique academic conferences, expanding the possibility of the study of simulated life, simulated life research indicates that China has entered a new age will be more broadly used in China's natural and social sciences in a variety of fields.

We evaluated the presented literature about population-dynamic examination in order to get better our approach. We have establish surprisingly that in very appropriate simulated life subfields, like virtual ecosystem. In this subfield, such energetic models are very imperative and they are even considered the best developed characteristic of ecosystem ecology. In fact, the energy flows are dependable for various phenomena such as the formation of traphic levels, food chains and webs, productivities and efficiencies[1][7].

The aim of this task is, at first to current a generic depiction of the population-dynamic study we have performed and later to show practical achievement of these analysis in a specific engineering optimization case, i.e. a routing problem.

The rest of this paper is organized as follows: In section II we discuss the related work done in the simulated life System. In section III, we discuss the population-dynamics analysis that has been carried out. In section IV, the perception analysis has been carried out and in section V, we conclude the paper by giving future direction.

## II. RELATED WORK

Simulated life is very essential field of research. In this field a variety of works has been done and a lot of work is also left to be done in the future. The work associated to simulated life such as sensor organs as well as engineering optimization using representative base simulated life can be described as follows:-

The study of Robot sensitivity first follows the learning of human's sentiment system, so all type of sense organs and function develop into the replication object. In the current research, robot sense is distant from the human's such as vision and image perceptive but the performance of a number of sensors exceeds humans feeling. Such as physical power sensor of robot can not only find out changing of several gram strength, but also be aware of force and moment of six directions and observably this is not feasible to achieve the human beings [3].

In recent times, research on multisensory system information [11] fusion is given more and more significance. To let the intelligence and autonomous system works in a variety of indefinite environments, the most important work is to be familiar with it's location in the environment, precisely and give the description of the environment model.

The simulated fish formed by Dr. Tuunifying [9] the simulated life technique and the computer graphics may be called as simulated life method based on computer animation.

The Swiss Country Science Fund, Toni and Daniel Thalmann[6] have made huge progress in research on characteristics of self-governing multi-agent receptors based on simulated life environment.

Abraham Prieto[6] and his collogues presented a simulated life system for engineering optimization problems based on agent and done the population-dynamic analysis.

Tie-qiang SUN[3] and his collogues of china have deliberated the human preceptor system life and proposed the possibility of perception in simulated life through the perception analysis.

## III. POPULATION-DYNAMICS ANALYSIS

The very first thing we have to acquire into account is that, for a population-dynamics analysis, we should make sure that the development rate of one species of the simulated life system is related with the density of individuals of other species. So in any simulated life system we necessitate to adapt the interactions between species to ensure this interactions [5][6]. Let's take an application example in which we illustrate as a simple application test, we have elected a routing problem that consists in *finding an algorithm* that provides the finest route to go from an origin to a target point on a random graph[2]. It provides the competence of defining all the elements in an simulated Life system, changing the environments, the definition of the participating elements or the constraints with a least effort and it permits developing a formation template valuable for all the different configurations of the different problem environments.

In real model, for instance in the case of the simple prey/predator model, the probability of a prey finding a resource point is straightforwardly related to the prey/resource density and consequently when resources reduce this density also reduces and the average path length for finding resources increases. Hence

Resource α Density and

$$\text{Resource} \propto \frac{1}{\text{Average Path Length}}$$

Suppose the resource input rate ($R_{in}$) and the resource output rate ($R_{out}$) are defined by the designer, but the rate of resources consumed by individuals of all the species ($R_{consume\_all\ species}$) depends on the number of individuals

in the system ($NS_{individual}$), the average Time($T_{average}$) to reach a resource and the unitary consumption ($U_{consumption}$) when reaching a resource can be given as;

$$R_{consume\_all\ species} = \frac{NS_{individual} \times U_{consumption}}{T_{average}}$$

As we know that in equilibrium state

$\Delta E = 0$ Hence

$R_{in} = R_{consume\_all\ species} + R_{out}$

Hence we can obtain general relations between parameters for the stable state.

## IV. PERCEPTION ANALYSIS

The humanized preceptor system is collected of various sensors, human's various organs and there functions are the simulation entity to sensors, the machine have less senses than people now, such a machine visualization understanding speed of image recognition capability and so on. In order to remove the uncertainty of environment, the characteristics information of the same environment collected by a single sensor many times or the homogeneity sensor must be fused[3][8].

The investigate of humanized preceptor is to manufacture the incomplete measurements from a number of homogeneous or heterogeneous sensors distributing in different location and states. To give comparatively reliable sensation explanation of the environment and humanized preceptor have to be active and co-operative. This model simulates students' ideas about scattering, The students in a class start out all bunched up, and the teacher asks them to spread out or scatter. This simulation shows the spread of the group when the individual students follow simple rules to decide whether to move and where. The scatterers move according to rules that were gleaned from several interviews with sixth-grade students. The students were asked: "At the beginning of a Physical Education class, the students are standing close together. The teacher tells the students to scatter so they may perform calisthenics. What happens? Can you describe and explain?" This model gives us the idea of how those students will perform, as in the survey students described this to the surveyor.

Suppose we are taking the example of student which are moving at equal speeds, if they move at all. Two students cannot occupy the same location whether or not to move and where to move depends on each of the rule that are described. The color of the scattering students reflects the rule that they are following;

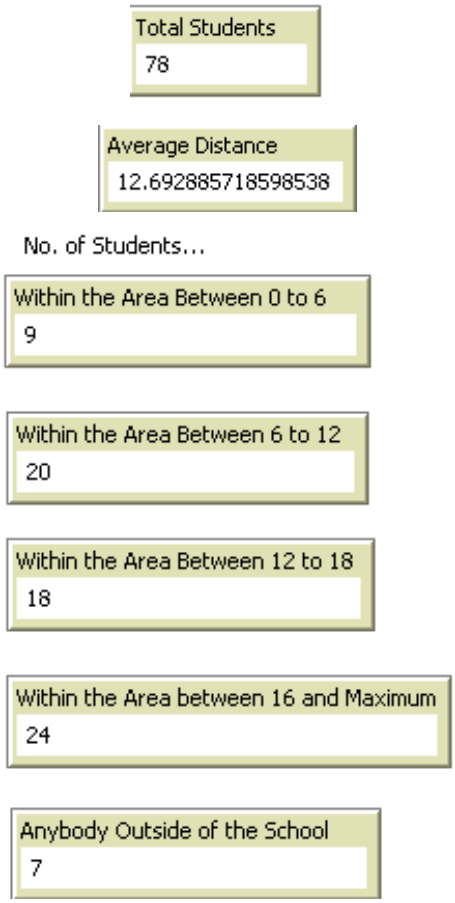
The result of perception before run is given in Fig.1

**Figure 1.**

While Fig. 2 given below is the perception when we run our program;

Figure 2.

This perception analysis[12] we give will be more clear if we take some value as a example then it will be show the following results:




## V. CONCLUSION AND FUTURE SCOPE

In this paper we have attempting to do the examination of population-dynamics to work out the optimization engineering difficulty as well as trying to give the perception analysis in simulated life and we have tried to give an model through network simulation and gives the results according to the perception analysis. We have also provided a number of sort of expressions and results based on the optimization engineering problem in the simulated life system. Presently, we are studying this method to give the results of evolutions before it will be completed, with successful initial results. In simulated life system, a lot of effort has to be done in the near

future. We can develop the model to not restricting the location of the man whether they are away from the scattering in perception analysis. We can give the more efficient population-dynamics analysis so that we can solve the problem of optimization very rapidly.

## REFERENCES

[1] Dorin, A., Korb, K. and Grimm, V., "Artificial-life ecosystems: what are they and what could they become?". Artificial *Life XI: Proceedings of the Eleventh International Conference on the Simulation and Synthesis of Living Systems*, pp. 173-180. MIT Press, Cambridge, MA (2008)

[2] Q. Chadwick, N. Walker, S. Bernard & E. Taylor, Institute of Psychiatry, London, UK, "Factors affecting the risks of behavior problems in children".

[3] Tie-Qiang SUN and Yi-Xin YIN ,"Research on structure of Humanized preceptor in Artificial Life",Hebei Ploytechnic University,China, 2009.

[4] Langton, C.G., "Artificial Life an overview", MIT Press(1995).

[5] Abraham Prieto, Richard Duro, and Francisco Bellas,"Obtaining Optimization Algorithms through an Evolutionary Complex System", *Abstracts booklet ECCS07*, pp.132-132, European Complex Systems Society, 2007

[6] Abraham Prieto, " Population Dynamics Analysis in an Representative Base Artificial life System for Engineering Optimization Problem", Senior Member IEEE,2009.

[7] Richard J. Duro, Abraham Prieto, Francisco Bellas, Pilar Caamaño, "A Complex Systems Based Tool for Collective Robot Behavior Emergence", *Lecture Notes in Artificial Intelligence*, vol. 5271, pp. 633-640, Springer-Verlag, (2008)

[8] Rolf Pfeifer, "Artificial Life", Institute for informatics der Universitat Zorich,2003.

[9] Guofeng Zhang, "The emotion mechanism of Artificial life fight behavior" International conference on computational intelligence and natural computing, 2009.

[10] Mark A. Bedau "ARTIFICIAL LIFE" 2007 Elsevier BV.

[11] Fu Tiao-Ping, Yang Bao-Ding," Operational Experiment Based on Artificial Life Modeling", Naval Arms Command Academy, China,2010

[12] Mark A. Bedau, John S. McCaskill, Norman H. Packard, Steen Rasmussen, Chris Adami, David G. Green, Takashi Ikegami, Kunihiko Kaneko, Thomas S. Ray "OPEN PROBLEMS IN ARTIFICIAL LIFE".