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UDK: 004.81

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ARTIFICIAL SUBCONSCIOUS

Abstract: *Here, in this work are presented a new part in computers world. And exactly, a new expression: Artificial Subconscious (ASU). Abbreviation sounds funny, but at the same time very memorable. Nowadays we could see how high speed has general development. Aim is to help humanity to receive artificial brain with more high precision and create a new technology in IT to do this. Figures from this paper will show us how we could obtain more dynamic calculus to receive a more efficiently decisions in computer systems in our days. In Artificial Intelligence must be more smart cells, which we could use in different situations of our needs. Besides of Artificial Intelligence in our days here will appear a new part of Computers and exactly: Artificial Subconscious, that always will be near the Artificial Intelligence. Also here will be too a part of technology – Knowledge base. This is three support pylon of our idea.*

This new smart cells will appear when is be necessary and will works with knowledge base. These cells will be as objects, classes in dynamic programming languages.

This system also is based on these sleeping cells, which could help us in more difficult calculus, thereby we could have o very high level artificial brain. With this brain we must help humanity to find answer of many questions that could be apllyed to obtain new technology of our future and helped peoples to make right decisions, to save this planet from themselves.

Keywords: *Conscious, Subconscious, Artificial Intelligence, Knowledge Base, Database, DNA, Cells, Python 3, OOP, Object, Cluster, Membrane Computing, Dynamic Language, Cell Programming, Artificial Subconscious, Decision.*

Introduction

This idea was appeared in September 2020 and will be a doctoral work. Here we are in the begining of way with this new idea in computer science. As we know every, almost every, scientific works are inspired from nature. My prototype is human brain with all processes. One important moment why we need in this system. Of course computers is more higher than human in capability of storage informations, and more higher than us in number of operation in one second, but in logic and take decisions human is more better.

That is why we came here with our system to understanding of human logic

and subconscious. From the beginning we shall show here what Conscious is on the human model. We shall adapted this concept to computers industry. We hope this is a great step for a world of computers. We are living in giant world of "spider" web with many interesting things around. In this point we put on the table of computers Artificial Intelligence. First of all here we can give the simple definitions of human conscious and subconscious, because when we begin this theme, we were inspired from live model of life, model of human activity. We were interesting how it works, how it happenes. How people use this energetic potential of theirs brain?

Conscious – this is logic, information, thougts, atention, when we read or talk... In other words, all our conscious actions. We could see that here does not exist feelings and emotions. Subconscious – this is something unknown exactly at the moment in the world of science medicine. In general words, this is a reservoir of feelings and memories.

Subconscious in computers – is that when decisions is making on base of hiden knowledge. We can use here Unconscious instead to Subconscious.

This title is the newest from medicine. But in our event Subconscious is more corectlly and we use this term. Now, when we have this exactly defininion, we shall form our new construstor with already known system that we have at the moment, Artificial Intelligence. Now, at this step Artificial Intelligence are equal with, became Conscious. The next step is put on the battle with Conscious our new part of computer science Subconscoius.

What we have done

We all know that this term of Artificial Intelligence is abstract yet. We all want to belive that we have a clear definition of this, but I we did't found it. We only want to have this definition, but this is the ocean of information that humanity need to structure. We think that in human subconscious is many hide information, that we need make a copy to, and for computer science. In Figure 1 is the first step of understanding how it will be worked.

Object-Oriented Programming (OOP) is on the base of our system. With help of this method of programming we can achieve our aims. Many languages of programming we could use here, in specially Python. This language in our opinion is better to be applied here. Of course, we can use another language but he must be dynamic. As we know in programming now exist three best concepts of programming: OOP, Procedural and Functional.

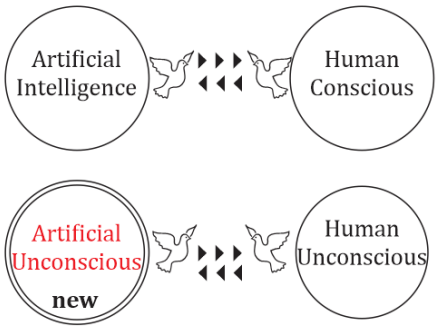

Figure 1. How may ASU appear in computer science?

In this Figure 1 above, we bring the first model, how appear Artificial Subconscious. To understand more, we took as example the cell from the human. As we know in our body we have more than 10 billions of cells. Every cell is working alone and execute one aim. These cells could be helping us to explaine the universe of computers. Each cell may be one object which could resolve one, or more problems. In OOP programming one object will be one cell. These cells could do many things. And our aim to make this objects to function how we need to do.

Information from every cell will be able to be save, because this is OOP programming, and here object can work with constructor, or if is need, could be distruct if we create one distructor. In functional and procedural programming many steps are not saved, but may be now we need not in them. In little conclusion here we could apply all three methods of programming simultany. For example: Python could work with all tree of them and this is very wonderful, that we have such as this modern and very high level language with short script and very compact, and explicit programming lexic.

In Python we could create many objects and very eficient work with them when we in need to do this. When this will be in our to do list, for example, if we need to procesing a picture. We must to detect how many object may be in this picture. Of course here we talk about 3-th version of Python.

Second of all we devided this picture in many parts. At first it will be one big object (our picture). After this part we recived, for example, in four clasters. One claster will be one object. Properties of every object is similary to DNA. As is known every cell has one DNA. This DNA could be understanding as one adress. Is this the same how one cell of memory in every programming language has one ID where we could place our variable. Also as we know ADN has properties to multiply and, of course, devide.

Result of this we could create many objects and each of them will be has Methods, Dates and Properties. In Figure 2, all circles will be worked together as much as possible. We could use only OOP, but in some situations we need all three methods of programming, because we also will need to save memory when we can do this step of saving. Procedural and functional programming a more low memory using in fact.

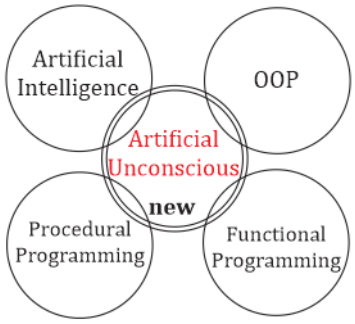

Figure 2. Second step to understanding ASU.

Of course OOP is will be apply in the first order.

Mathematical Model for ARTIFICIAL UNCONSCIOUS system

After our studies about human conscious and subconscious, we have made a mathematical model about how is working. And what we have recived? It's very interesting!

The sum of all distances from human eye to all points of object, through information that is situated in human subconscious – is the first rezult of human opinion about this object.

For example: We all have yet an opinion about somebody, when we meet him for the first time. All of this is showing in Figure 3. We did not know him, but after saw for the first time, yet we have some information about him in our brain. What information is this? Answer is, like or dislike him, without knows something about him. This information came from subconscious. Well, here we could yet put question of appearing our 1 or 0 from binary sistem, and work with them. This is for the future for this system. After suming all distance we will recive a number. This number will very big and it will be working with knowledge base. Our sytem will recive some data and will took them through our smart programm, which will use dates from some knowledge base. What language we will aplly for our aim. Of course only a dynamic language. We come with recomandation to use here Pytnon 3. Is very strong language to work with dates, which has two smart methods like list comprehension and slicing? This method is very good that let us to make a very short script. Also you could use another dynamic language with very high level.

Why very high level language, because it is more understanding and let us to think about time, and we can save many time to do something in this system, to optimized him, to change something here and so on. Also Python will let us to achive very high perfomance, due to his ready to work libraries and methods. This point that Python has very many libraries and with method *pip*, prorgrammer could import any of them is giving us a big avantage to find right way of our reseaches in every field of science. In other languages we need to elaborate all line from new. But here, in Python we could use ready Methods and this language we can save many ours ar days. As each of us, we all need to save time more efficiently. We have one point from where we will make our calculus to object in

need, it could be, lenses of videocamera or photocamera which could be situated, for example, on flying droid.

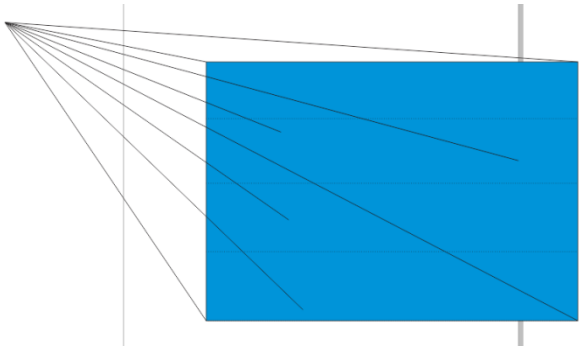

Figure 3. Mathematical model to understanding how work subconscious.

Of course we understand that Python as a dynamic language is more slowly than another static language, but we still belive that this big problem of stability and speed perfomance will be solved in time near by. Now we will describe about cells. And here apeared a new step of programming, and exactly this one: Cellular Programming. And we will place this circle in our general loop.

In Figure 4, next picture, now we have one more circle in our loop. This cellular programming we have from Membrane Computing. Every cell can be divided in two, after in four, in eight and so on. (Figure 5.).

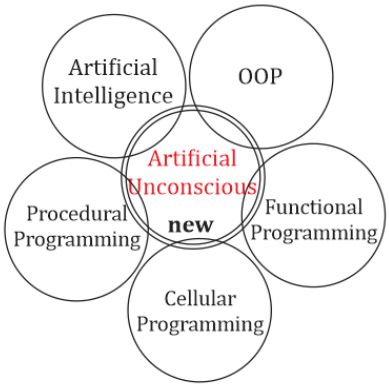

Figure 4. Next step to understanding ASU with Membrane Computing.

Now our Subconscious loop is almost ready to use it, in help us to receive more efficient brain that was in Artificial Intelligent. But another two steps remained to describe here. One of them is how we recognize objects from picture and final moment at the end we will place it. For example we have a picture. We will devide this picture in many parts. So, some parts will recived for one object. We can't give for each part the object. And how we do with another parts of pictures, which don't have objects?

In this case we can use one function from OOP programming - inheritance. And each object will process every part of the picture. Inheritance let us do not repeat all methods again and again in every object.

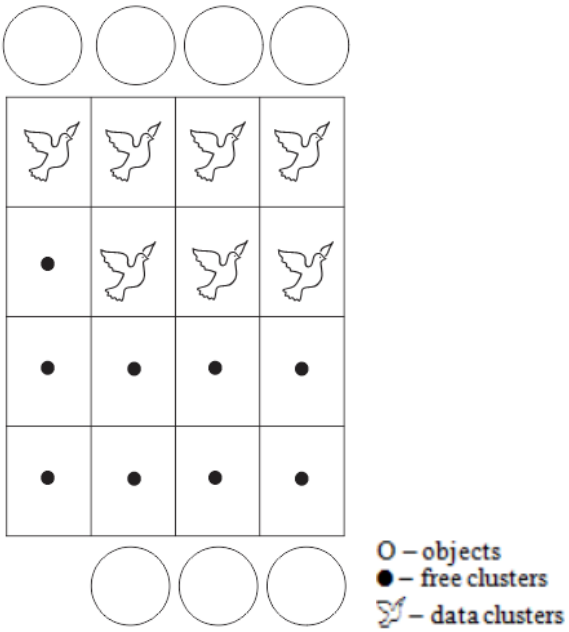

Figure 5. Here is model of one image which is being separated in many objects with dates.

And finally we have a general scheme of our artificial subconscious system, where is appear and last part, without this part it can't be realized our idea. Of course we talk about Knowledge base, which is including in our system loop.

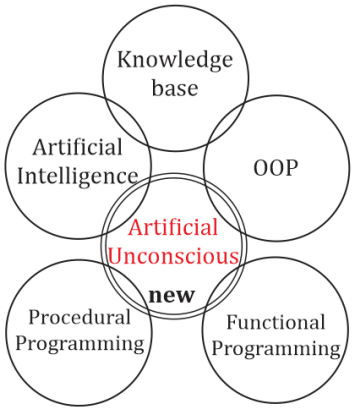

Figure 6. Artificial unconscious system.

At that moment our system is in this figure above here. In time we will performance our construct of this idea.

Conclusion

Here we brought these two important definitions that defined Artificial Subconscious:

- *Subconscious in computers - is that when decisions is making on base of hiden knowledge.*
- *Subconscious in computers - the sum of all distances from artificial eye to all points of our object, that is passed through information that is situated in knowledge base and form the right rezult decision about this object.*

This is the first steps to help artificial system to make take correct decisions

and find the best priority of different technological systems. We hope artificial subconscious will use only in peacefully aims.

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UDK: 004.75; 004.622

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SENSOR NETWORK FOR ENVIRONMENT MONITORING

Abstract: *This paper presents the results of the development of a sensor network for environment monitoring. The system presents a mesh of data processing nodes distributed in the monitoring space that perform the operations of acquisition, storage, processing and communication between neighboring nodes. Mathematical models are developed to perform the interpolation operation.*

Keywords: *Sensor Network, Grid Computing, Environment Monitoring, Distributed Computing, Interpolation.*

Introduction

A sensor network presents a complex infrastructure composed of measurement, acquisition, storage, processing and communication elements integrated into a functional logical unit that provides a user with the ability to instrument, monitor and respond to events and phenomena in a specified environment. The user typically presents a civil, governmental, commercial or industrial entity. The environment is defined by the physical world, a biological system, natural or technological process [1]. Traditionally, sensor networks are used in various strategic applications such as radiation detection systems, reconnaissance and surveillance, command systems, etc. In recent decades, a trend has been observed in the development of specialized sensor networks with applications in biology and chemistry, service-oriented applications, physical security, medicine, traffic surveillance and control, industrial and production