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A Study Review: A Virtual Brain Technology in Life

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Abstract: *A Human mind is the most significant making of God. The man is savvy in light of the mind. "Blue Brain" is the name of the world's first virtual cerebrum. That implies a machine can work as human mind. With the progression in innovation, human, a definitive wellspring of data and revelation ought to additionally be saved. As such, human is does not live for a large number of years yet the data in his psyche could be spared what's more, utilized for a few a great many years. Today researchers are in research to make a fake cerebrum that can think, reaction, take choice, and keep anything in memory. The primary point is to transfer human mind into machine. With the goal that man can think, take choice with no exertion. After the passing of the body, the virtual mind will go about as the man. So, even after the passing of an individual we won't lose the learning, insight, identities, emotions and recollections of that man that can be utilized for the advancement of the human culture.*

Keywords: *Blue brain, Brain, Neurons, Virtual brain, Nan bots.*

I. Introduction

Blue Cerebrum is a counterfeit mind which can think, take choices, and react as a characteristic cerebrum. The most critical inquiry that emerges here is that "Is it conceivable to make a human cerebrum?"

Indeed, it is conceivable with the assistance of innovation on the grounds that everything that is made by man today, he generally pursued the nature. Thus, a super PC with high measure of capacity limit, handling power and an interface between the human cerebrum and this virtual one can be utilized for making it. This isn't going on today or tomorrow. Be that as it may, we are anticipating this in not so distant future. On the off chance that we at long last accomplish this, at that point even after death of human body we safeguard his insight and knowledge. It is the most recent innovation in the field of neural system. This innovation opens new entryway in the field of man-made reasoning. It gives complete reenactment of the inner availability of cerebral part with the outer man-made brainpower arrange [1].

This BLUE Cerebrum venture was established in May 2005 by Henry Imprint smash at the EPFL in Lausanne, Switzerland. Objectives of the venture are to pick up a total comprehension of the mind and to empower better and quicker improvement of mind illness medicines. The examination includes contemplating cuts of living cerebrum tissue utilizing magnifying lens and fix clasp cathodes. Information is gathered about all a wide range of neuron types this information is utilized to manufacture naturally sensible models of neurons and systems of neurons in the cerebral cortex. The recreations are completed on a Blue Quality supercomputer worked by IBM, henceforth the name "Blue Virtual Brain". The recreation programming depends on Michael Hines' NEURON, together with other custom-constructed parts [2].

II. A Virtual Blue Brain

Virtual Blue Brain is the name of the super PC or blue brain created by IBM. On the off chance that conceivable, it would be the world's first counterfeit cerebrum. Inside 30 years we would be ready to transfer our knowledge and cerebrum into the super PC. The insight we can utilize this learning for the improvement of up and coming age of human even after the passing of the man. It can take choices nonattendance the of individual. on the past encounters of the individual and apply it to the comparable circumstance happening in the present. The help of fake mind we can filter our cerebrum into a PC. this interface the information put away in the characteristic mind can be up stacked into the super PC. Unique procedure and structure of our focal sensory system can likewise be contemplated [3].

III. Virtual Brain Needs

The human has different knowledge and intelligent quality from others. By using the blue brain technology, it can possible to access human intelligent and decision taking knowledge after his/her death. For example, Newton, A. P. J. Abdul Kalam, C.V. Raman, Einstein. In Artificial Brain to solve this problem when the situation coming in extreme level, that time the virtual brain gives the solution to solve the problem. By using historical data which collected from Nan bots from Neurons.

Figure 1: *Artificial Blue Brain*

IV. Role Of Nanobots

Nanobots assume an essential job in the interfacing the man-machine-man with blue mind innovation. Nanobots are only little robots which are in the extent of 10-9. These nanobots are infused in to people to gather the information, tumor or sickness area. In the field of medicinal sciences nanobots assume an imperative job to distinguish the malady and to fix the sickness. Resulting in these present circumstances paper nanobots are utilized in various way for example they are utilized for the gathering of information from neurons and transmits to the outside gadget. Going to the key parts and the structure traits of the nanobots are recorded beneath [4],

- Shapes and Size
- Method of mobility/propulsion
- Information storage
- Power generation
- Telemetry and transmission
- Control and navigation

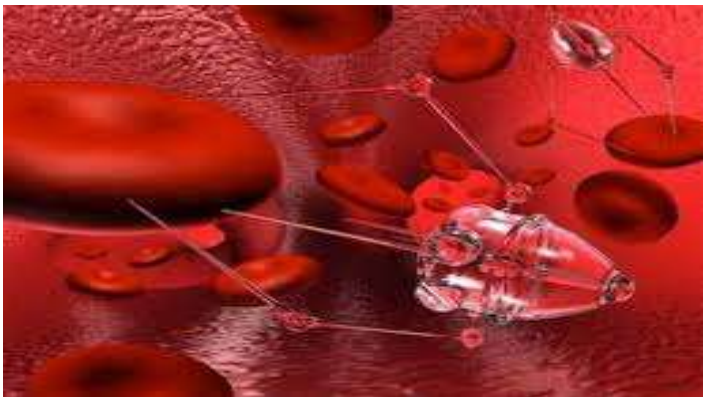

Figure 2: *Nan bots*

V. Work Of Human Brain & Blue Brain

The human capacity to feel, translate and even observe is controlled, in PC like computations, by the mysterious sensory system. Indeed, the sensory system is very similar to enchantment since we can't see it, yet its working through electric driving forces through your body. One of the world's most "complicatedly composed" electron components is the sensory system. See the ***Figure 3***: Not engineers have approached for making circuit sheets and PCs as sensitive and exact as the sensory system. To comprehend this framework, one needs to know the three straightforward capacities that it puts without hesitation: tactile information, coordination, engine yield [5].

a. Funcation of Human Brain

1. **Sensory information**: When our eyes see something or when our hands contact a warm surface, the sensory cells, otherwise called Neurons, communicate something specific straight to our mind. This is called sensory information since we are placing things into our mind by method for senses.

2. **Integration:** Integration is best known as the translation of things like taste, contact, and sense which is conceivable due to our tangible cells, known as neurons. Billions of neurons cooperate to comprehend the change around us.
3. **Motor Output:** When our mind comprehends the change, either by contacting, tasting or by means of some other medium, at that point our cerebrum communicates something specific through neurons to effector cells, muscles or organ cells, which really work to play out our solicitations and follow up on our condition. The word engine yield is effectively recalled whether one should believe that our putting something out into the earth using an engine, similar to a muscle which takes the necessary steps for our body [6].

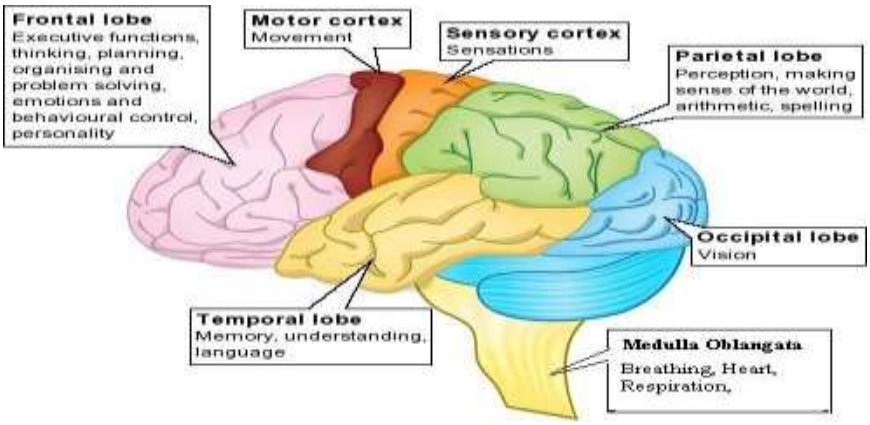

Figure 3: *Human brain structure*

b. Virtual Brain Function

- The uploading Human brain to Blue brain
  - The is possible to uploading the all information by using the Nanobots also known as small kind of robots. The Nanobots travel through the circulatory system.
  - Its travel inside of the brain and spine to collect the structure of neuron system and monitoring all activity from the human. This entire information is stored in computer it could continue the human functions.
- Steps to Develop Virtual Brain

The three major steps are used to created blue brain such as,

1. Data collection: to collect and analyze information using microscopes
2. Data simulation: to created virtual cells and neurons to do all human function by using algorithms
3. Visualization: the help of RT tool to learn the real operation of neurons and synapses. It's using 3D visual for virtual sensing.

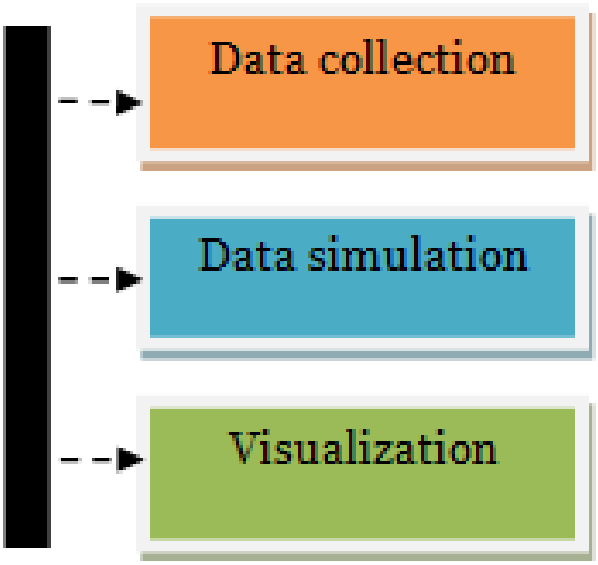

Figure 4: *Virtual Brain develop process*

VI. Hardware/ Software Components Of Artificial Brain

The "Blue Gene" supercomputer worked by IBM is utilized for the advancement of Virtual brain. This is the place the name "Blue Brain" begins from. A see the **Table1:** The arrangement incorporates Blue Gene/L, Cyclops64, (some time ago Blue Gene/C), Blue Gene/P and Blue Gene/Q. The equipment and programming required to assemble a Blue Mind are [1]:

- 8,096 CPUs at 700 MHz
- ii. 256MB to 512MB memory per processor.
- iii. 100 kilowatts control utilization.
- iv. Processor with an exceptionally high preparing force.
- v. 22.8 TFLOPS crest handling speed.
- vi. Linux and C++ programming

Table 1: Real and Virtual brain simulation [7]

Natural Brain	Virtual Brain
Input: Neurons are responsible for information passing in Nervous system.	**Input:** Scientists have created artificial neurons.
Interpretation: Received impulses are interpreted the brain.	**Interpretation:** Received impulses are interpreted by artificial brain by means of registers.
Ouput: After interpretation, brain sends the response electric pulses to sensory cells.	**Ouput:** Ouput signal will be given to artificial neurons in body based on status of registers.
Processing: Arithmetic and Logical calculations.	**Processing:** Arithmetic and Logical calculations and artificial intelligence.
Memory: There are some neurons which stores some data permanentlu.	**Memory:** Secondary memory is used for the same purpose.

VII. Merits And Demerits Of Blue Brain

Merits:

- Easy to remember without stress
- Decision making without human presence
- To use intelligent person knowledge after death
- To understand the animal activity easily
- To develop new innovation technology

Demerits:

- Human always depending on computer
- To misuse intelligent person knowledge against society
- To develop human cloning its make to danger to society

VIII. Blue Brain Applications

- To discover the Drug disease disorder
- A tool is used to discover the Brain diseases
- Collecting and analyzing 100 years of information
- To cracking Neural coding
- Easily accessing the Neocortical information
- To build foundation for full brain simulation
- To create direct nerve to deaf
- To greed super computer creates new generation.

IX. Conclusion

The Blue Brain technology is the new innovation for the new generation to create feel of virtual brain like a human being. In Artificial intelligence the blue brain is high peek project and research area to develop the human intelligent and knowledge after the death.

The study of blue brain technology paper about the virtual brain and its simulation, role of nanobots in blue brain and merits and demerits, and its applications. If this technology could help to develop high intelligent person like Newton, A.P.J. Abdul Kalam, C.V. Raman, etc., to implement in Scientific, Mathematics, Economics level the country can develop in their dream becomes true.

References

[1]. Mannu Kumari,Rizwan Khan, "**Review paper on Blue Brain Technology**", International Journal of Computer Applications (0975 – 8887) Volume 180 – No.48, June 2018.

[2]. Kavya Priya G.V and Monika Sruthi.J, "**A Review on Blue Brain Technology**", International Journal of Trend in Research and Development, Volume 3(6), ISSN: 2394-9333 www.ijtrd.com.

[3]. Priyanka Ingle, M. U. Karande, **"The Blue Brain - The Survey of Paper Blue Brain"**, International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056, Volume: 05 Issue: 05 | May-2018.

[4]. Kodi Balasriram, **"The Man-Machine-Man(MMM) Interfacing with the Blue Brain Technology"**, International Journal of Current Trends in Engineering & Research (IJCTER) e-ISSN 2455–1392 Volume 3 Issue 7, July 2017 pp. 7 – 12.

[5]. Swapnil S. Bachatel, Prof. Vamshi Krishna, **"A Survey Paper on Blue Brain Technology",** International Journal of Advance Research in Computer Science and Management Studies Volume 3, Issue 7, July 2015 pg. 137-144.

[6]. Ravi Bandakkanavar, "**Blue Brain**" | July 11, 2017, https://krazytech.com/technical-papers/blue-brain.

[7]. Y. Vijayalakshmi, Teena Jose, Dr. S. Sasidhar Babu, Dr.P.Manimegalai, Sruthi R. Glorya Jose, **" Blue Brain – A Massive Storage Space",** Advances in Computational Science and Techno9logy, ISSN 0973-6107, Volume: 10, Number 7 (2017), pp. 2125-2136.