

The Future Generation Intelligent System Need For Human Memory To Detect Crime Using Virtual Brain Technology.

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ABSTRACT:

In this paper we have suggested an idea to detect the crime of the human by using virtual brain technology. Human brain is the most valuable creation of the god in the world but "Virtual brain" or virtual brain that means a machine can act as a human brain, it can think, take decision and respond, a machine can function as a human brain. The unique identity of the human being is their own creative knowledge. After death, it will get destroyed. But we will recreate their knowledge using virtual brain technology. Simply we called it as virtual brain. The Virtual brain is an attempt to reverse engineering the human brain and recreate it at the cellular level inside a computer simulation. After the death of the body, the virtual brain will act as a man. So, even after the death of the person we will not lose the knowledge, intelligence, personalities, feelings and memories of the human.

KEYWORDS: human brain, virtual brain, Nanobots, blue gene super computer, neocortex.

1. INTRODUCTION.

Human does not live for thousands of Years but the information in his mind could be saved and used for several thousands of years. [1] Intelligence refers to the ability to understand, think, act, interpret and predict the future to achieve and handle relationships, concepts etc. It helps in decision making, problem solving, learning and reasoning. Intelligence thus plays a very important role in survival and progress beyond the present. The technology helpful in this activity is BlueBrain. The main aim is to upload human brain into machine. It can be used for the development of the human society. [2] On 1 July 2005, the Brain Mind Institute (BMI, at the Ecole Polytechnique Fédérale de Lausanne, Switzerland.) and IBM (International Business Machines) launched the Virtual brain Project. The main goal

of this project. As of August 2012 the largest simulations are of micro circuits containing around 100 cortical columns such simulations involve approximately 1 million neurons and 1 billion synapses. This is about the same scale as that of a honey bee brain. It is hoped that a rat brain neocortical simulation (~21 million neurons) will be achieved by the end of 2014. A full human brain simulation (86 billion neurons) should be possible by 2023 provided sufficient funding is received. The research involves simulate the human brain and study the biological accuracy, intelligence of the [2] Human brain. In this Paper we are reviewed about virtual brain, why we need a virtual brain, the functioning of the human brain system. Applications of this technology, about the blue gene super computer,

crime detection with nano Bots, comparison between the human intelligence and Artificial intelligence, merits and demerits of using this artificial Intelligence.

II. VIRTUAL BRAIN

Virtual brain is the name of the world's first virtual brain. Virtual machine is one that can function as, a very appropriate application of an Artificial Intelligence human brain. [4] Within 30 years, we will be able to scan ourselves into the computers. We can say it as Virtual Brain i.e. an artificial brain, which is not actually a natural brain, but can act as a brain. It can think like brain, take decisions based on the past experience, and respond as a natural brain. [1] It is possible by using a super computer, with a huge amount of storage capacity, processing power and an interface between the human brain and artificial one.

Consciousness is a part of natural world. We believe that consciousness depends on mathematics and logic, laws of physics and chemistry and biology; it's not magical. The concept of mind uploading is based on this mechanical view of the mind. It denies the ritualistic view of human life and consciousness. Eminent computer geniuses and neuroscientists have foretold that specially programmed machines will be capable of thought and even reach some level of consciousness. Such machine intelligence ability might offer a computational substrate necessary for uploading.



III. WHY WE NEED A VIRTUAL BRAIN.

Intelligence is the inborn quality that cannot be created. Some people have this quality, so that they can think up to such an extent where other cannot reach. Human society is always in need of such intelligence and such an intelligent

brain to have with.[3] But the intelligence is lost along with the body after the death. The virtual brain is a solution to it. The brain and intelligence will be alive even after the death. We often face difficulties in remembering things such as people names, their birthdays, and the spellings of words, proper grammar, important dates, history facts, and etcetera. In the busy life everyone wants to be relaxed. Can't we use any machine to assist for all these? Virtual brain may be a better solution for it.

We need Virtual brain because of following:

- To upload contents of the natural brain into it.
- To keep the intelligence, knowledge and skill of any person for ever.
- To remember things without any effort.
- To store the data securely it retrieved whenever it need.
- The brain and intelligence will be alive even after the death.
- Virtual Machine can produce the better solution to human problem.

IV FUNCTIONENING OF THE HUMAN BRAIN SYSTEM

Basically functioning of Human Brain depends on following:

The cerebrum

The cerebellum

The brain stem

[A] CEREBRUM –

The cerebrum or cortex is the largest part of the human brain, associated with higher brain function such as thought and action. The cerebral cortex is divided into four sections, called "lobes": the frontal lobe, parietal lobe, occipital lobe, and temporal lobe. Here is a visual representation of the cortex:

[B] CEREBELLUM

The cerebellum, or "little brain", is similar to the cerebrum in that it has two hemispheres and has a highly folded surface or cortex. This structure is associated with regulation and coordination of movement, posture, and balance. The cerebellum is assumed to be much older than

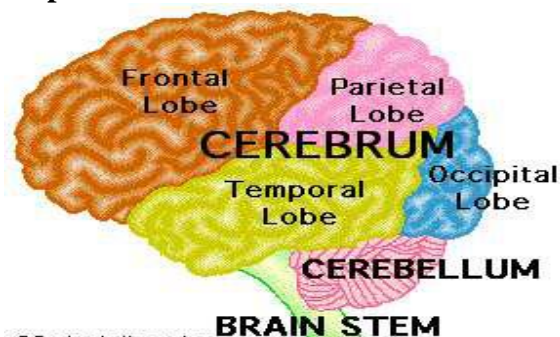
he cerebrum, evolutionarily. What do I mean by this? In other words, animals which scientists assume to have evolved prior to humans, for example reptiles, do have developed cerebellums. However, reptiles do not have neocortex.

[C] BRAINSTEM

Underneath the limbic system is the brain stem. This structure is responsible for basic vital life functions such as breathing, heartbeat, and blood pressure. Scientists' say that this is the "simplest" part of human brains because animals' entire brains, such as reptiles (who appear early on the evolutionary scale) resemble our brain stem.

[D]NEOCORTEX

In the human brain, it is the largest part of the cerebral cortex which covers the two cerebral hemispheres, with the all cortex making up the rest. The neocortex is made up of six layers, labeled from the outer in, I to VI. In humans, the neocortex is involved in higher functions such as sensory perception, generation of motor, spatial reasoning, conscious thought and language.^[1] There are two types of cortex in the neocortex – the **true is cortex** and the **proisocortex**



V APPLICATIONS

- Gathering and Testing 100 Years of Data.
- Cracking the Neural Code
- Understanding Neocortical Information Processing
- A Novel Tool for Drug Discovery for Brain Disorders
- A Global Facility
- A Foundation for Whole Brain Simulations
- A Foundation for Molecular Modeling of Brain Function

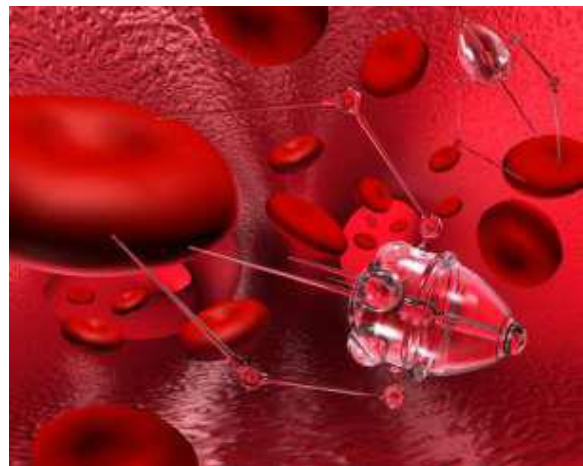
**COMPUTER + NEURON FUNCTION =
VIRTUAL BRAIN:**

Virtual brain records the data of the human through their neuron function in the computer. Virtual brain would be the world's first virtual brain. Within 30 years, we will be able to scan ourselves into the computers. Virtual brain can think like a brain, take decisions based on the past experience and respond as a natural brain. So the man can think without any effort. It is possible by using the super computers, with a huge amount of storage capacity, processing power and interface between the human brain and artificial one. Through this interface the data stored in the natural brain can be uploaded into the computer. So the brain and the knowledge, intelligence of anyone can be kept and used forever, even after the death of person.

HOW IT IS POSSIBLE?

Now the question comes in mind that is it really possible to create such types of brain. The answer of this question is yes.

1. This is possible due to fast growing technology.
2. The uploading is possible by the use of small robots known as the Nanobots.
3. These robots are small enough to travel throughout our circulatory system. Traveling into the spine and brain, they will be able to Monitor the activity and structure of our central nervous system.
4. They will be able to provide an interface with computer while we still reside in our biological form.



**VI CRIME DETECTION USING SUPER
COMPUTER:**

[1] Virtual brain can record the past experience, memories, knowledge of the person. By using this recording, we will recover data of the person at any time. Using this advantage we would be able to detect the crime of the person. This method of detection has many advantages than the lie detector. In the lie detector, electric Voltage is passed on to the human body to detect the crime. Lie detecting technique provides a lot of side effects such as mental depression, head ache. But in Virtual brain technique, only we just insert the nanobots into the person who has done the crime which interfaces with the computer to record the past details of the person. The nanobots travel the circulatory system of the crime people throughout the circulatory system and it will cause some data collected from the crime people. From that we can be able to detect the crime of the person. By applying this virtual brain technology. This application is a major breakthrough for the crime department to make the detection of the crime.



[2] Nanobots will be the next generation of nanomachines. Advanced nanobots will be able to sense and adapt to environmental stimuli such as heat, light, sounds, surface textures, and chemicals; perform complex calculations; move, communicate, and work together; conduct molecular assembly; and, to some extent, repair or even replicate themselves. Nanobot.info is an informational site that provides information on both recent developments and future applications at the intersection of nanotechnology and robotics. Nanotechnology is the science and application of creating objects on a level smaller than 100 nanometers. The extreme concept of nanotechnology is the "bottom up" creation of virtually any material or object by assembling one atom at a time. Although nanotech processes occur at the scale of nanometers, the materials and objects that result from these processes can be much larger. Large-scale results happen when nanotechnology involves massive parallelism in which many simultaneous and synergistic nanoscale processes combine to produce a large-scale result.

[3] Wetware is a term drawn from the computer-related idea of hardware or software, but applied to biological life forms. Here the prefix "wet" is a reference to the water found in living creatures. Wetware is used to describe the elements equivalent to hardware and software found in a person, namely the central nervous system (CNS) and the human mind. The "hardware" component of wetware concerns the bioelectric and biochemical properties of the CNS, specifically the brain. If the sequence of impulses traveling across the various neurons are thought of symbolically as software, then the physical neurons would be the hardware. The amalgamated interaction of this software and hardware is manifested through continuously changing physical connections, and chemical and electrical influences that spread across the body. Wetware technology now exists in which a sample of brain cells is put onto a 60 electrode circuit board where these semiconductor should have been. This circuit and the sample on top of it are then, either wirelessly or through the internet, connected to a technological device of various purposes. That device is now alive and has the ability to think, make its own decisions and most amazingly of all, creatively problem solve, which no other technology has ever achieved before.

[4] **Lie detection**, also referred to as deception detection, uses questioning techniques along with technology that record physiological functions to ascertain truth and falsehood in response. It is commonly used by law enforcement and has historically been an inexact science. There are a wide variety of technologies available for this purpose. The most common and long used measure is the polygraph, which the U.S. National Academy of Sciences states, in populations untrained in countermeasures, can discriminate lying from truth telling at rates above chance, though below perfection. The goal of a lie detector is to see if the person is telling the truth or lying when answering certain questions.

When a person takes a polygraph test, four to six **sensors** are attached to him. A polygraph is a machine in which the multiple ("poly") signals from the sensors are recorded on a single strip of moving paper ("graph"). The sensors usually record:

- The person's **breathing rate**

- The person's **pulse**
- The person's **blood pressure**
- The person's **perspiration**

Sometimes a polygraph will also record things like arm and leg movement.

When the polygraph test starts, the questioner asks three or four simple questions to establish the norms for the person's signals. Then the real questions being tested by the polygraph are asked. Throughout questioning, all of the person's signals are recorded on the moving paper.

Both during and after the test, a polygraph examiner can look at the graphs and can see whether the vital signs changed significantly on any of the questions. In general, a significant change (such as a faster heart rate, higher blood pressure, increased perspiration) indicates that the person is lying.

When a well-trained examiner uses a polygraph, he or she can detect lying with high accuracy. However, because the examiner's interpretation is subjective and because different people react differently to lying, a polygraph test is not perfect and can be fooled.

V NETWORKS OF NEURON:

First a network skeleton is built from all the different kinds of synthesized neurons. Then the cells are connected together according to the rules that have been found experimentally. Finally the neurons are functionalized and the simulation brought to life. The patterns of emergent behavior are viewed with visualization software. A basic

unit of the cerebral cortex is the cortical column. Each column can be mapped to one function, e.g. in rats one column is devoted to each whisker. A rat cortical column has about 10,000 neurons and is about the size of a pinhead.

VII MERITS AND DEMERITS OF VIRTUAL BRAIN:

1. MERITS

- Prosthetic devices to restore vision, hearing or limb control might be the next step.
- It is useful in medical world for the person having short term memory loss, parkinsons disease and it can also provide the hearing for the deaf people.
- Remembering things without any effort.
- Making decision without the presence of a person.
- Using intelligence of a person after the death.
- Understanding the activities of animal.
- Allowing the deaf to hear via direct nerve stimulation.

2. DEMERITS:

- It is similar to human cloning problem.
- If it is implemented, people become completely dependent on computer.
- Others may use technical knowledge against us.
- Another fear is found with respect to human cloning.

VI: BRAIN SIMULATION

NATURAL BRAIN	VIRTUAL BRAIN
INPUT: Through the natural neurons	INPUT: Through the artificial neurons or silicon chips.
INTERPRETATION: By different states of the neuron in the brain.	INTERPRETATION: By a set of bits in the set of registers.
OUTPUT: Through the natural neurons	OUTPUT: Through the silicon ship
PROCESSING: Through arithmetic and logical calculations.	PROCESSING: Through arithmetic and logical calculations and artificial intelligence.

MEMORY:

Through permanent states of neurons.

MEMORY:

Through secondary memory.

VII HARDWARE AND SOFTWARE REQUIREMENT

A Super computer.

Memory with a very large storing capacity.

Processor with a very high processing power.

A very wide network.

A program to convert the electric impulses from the brain to input signal, which is to be

Received by the computer.

VIII HOW TO BUILD A VIRTUAL BRAIN?

It involves the following steps:

- Data Collection

It involves collecting brain portions, taking them under a microscope, and gauging the shape and electrical behavior of neurons individually. This method of studying and cataloguing neurons is very familiar and worldwide. The neurons are captured by their shape, electrical and physiological activity, site within the cerebral cortex, and their population density. These observations are translated

Into precise algorithms which describe the process, function, and positioning methods of

IX: CONCLUSION

In conclusion, we will be able to transfer ourselves into computers at some point Very soon this technology will be highly accepted whole over the world but wisdom lies in right use. Technology does not create Brain but brain creates Technology. We will be able to transfer ourselves into the computer at same point. Further in future, the real dreams would be the realization of the brain-in-computer and chip-in-brain arrangement We believe that the connection with Virtual brain and Soul Catcher may exceed human intellectual capacity by around 2017, and that it is likely that we will be able to download the human brain at sometime around 2050. Poligraphy testing can be done with the help of these technology .The criminals and terrorists can be made to undergo this test in order to know more about their mindstand activities which will help us to take necessary precautions to save our country from the black hands.

FUTURE WORKS

Virtual brain technology can be used in fully paralyzed people to communicate with the world. We have all heard about the very famous

neurons. Then, the algorithms are used to generate biologically-real looking virtual neurons ready for simulation.

- Data Simulation

The simulation step involves synthesizing virtual cells using the algorithms that were found to describe real neurons. The algorithms and parameters are adjusted for the age, species, and disease stage of the animal being simulated. Every single protein is simulated, and there are about a billion of these in one cell. First network skeletons built from all the different kinds of synthesized neurons. Then the cells are connected together according to the rules

that have been found experimentally. Finally the neurons are functionalized and the simulation brought to life. The patterns of emergent behavior are viewed with visualization computer and vice versa. Very powerful Nanobots to act as the Interface between the natural brain and the computer.

scientist Stephen William Hawking who has a motor neuron disease and is entirely paralyzed. 67is through a speech generating device that he communicates with the world. He would be able to contribute more to the world of science if he were physically sound. Through the virtual brain technology we would be able to make use of the intelligence of such great men for the future developments.

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