BLUE BRAIN ADVANCE TECHNOLOGY

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ABSTRACT

Human brain is the most valuable creation of God. The research involves studying slices of living brain tissue using microscopes and patch clamp electrodes. The main aim is to upload human brain into machine. data is collected about all the many different neuron types. This data is used to build biologically realistic models of neurons and networks of neurons in the cortex. The primary machine used by the Blue Brain Project is a Blue Gene supercomputer built by IBM.

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Introduction:

Human brain the most valuable creation of god. The man is called intelligent because of the brain. But we loss the knowledge of a brain when is destroyed after the death .It would be the world first virtual brain. Within 30 years. We will be able to san in to the computers. When man does not have a device called computer, it was a big question for all .But today it is possible due to the technology. Technology is growing faster than everything. It is called "**Blue brain** ".If possible, this would be the first virtual brain of the world.

How it is possible?

Data acquisition involves taking brain slices, placing them under a microscope, and measuring the shape and


Electrical activity of individual neurons. This is how the different types of neuron are studied and catalogued. The neurons are typed by morphology (i.e. their shape), elec trophysiologicalbehaviour, location within the cortex, and their population density. These observations are translated into mathematical algorithms which describe the form, function, and positioning of neurons.

Nanobots could also carefully scan the structure of our brain, providing a complete readout of the connections between each neuron. They would also record the current state of the brain. This information, when entered into a computer, could then continue to function as us. All that is required is a computer with large enough storage space and processing power. Is the pattern and state of neuron connections in our brain truly all that makes up our conscious selves? Many people believe firmly those we possess a soul, while some very technical people believe that quantum forces contribute

to our awareness. But we have to now think technically. Note, however, that we need not know how the brain actually functions, to transfer it to a computer. We need only know the media and contents. The actual mystery of how we achieved consciousness in the first place, or how we maintain it, is a separate discussion.

Uploading human brain:

The uploading is possible by the use of small robots known as the Nanobots .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. They will be able to provide an interface with computers that is as close as our mind can be while we still reside in our biological form. Nanobots could also carefully scan the structure of our brain, providing a complete readout of the connections. This information, when entered into a computer, could then continue to function as us. Thus the data stored in the entire brain will be uploaded into the computer
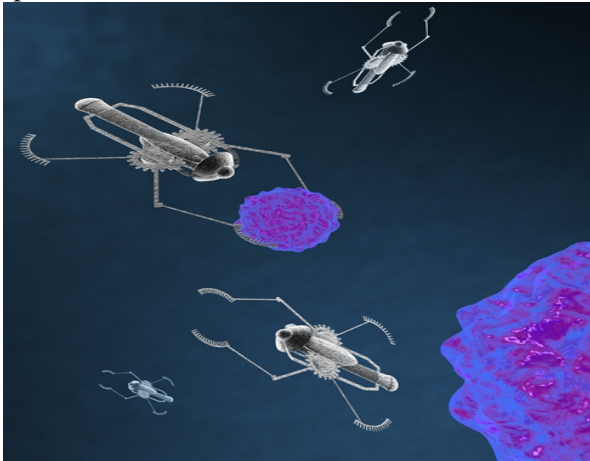
IBM, in partnership with scientists at Switzerland's Ecole Polytechnique Federale de Lausanne's (EPFL) Brain and Mind Institute will begin simulating the brain's biological systems and output the data as a working 3-dimensional model that will recreate the high-speed electro-chemical interactions that take place within the brain's interior. These include cognitive functions such as language, learning, perception and memory in addition to brain malfunction such as **psychiatric disorders** like depression and autism. From there, the modeling will expand to other regions of the brain and, if successful, shed light on the relationships between genetic, molecular and cognitive functions of the brain.

The model brain can accurately echo the song of a South American sparrow. The bird sing by forcing air from their lungs past folds of tissue in the voice box. The electric impulses from the brain that force the lungs had been recorded and when the equivalent impulses were passed to the computer model of the lungs of the bird it begins to sing like the bird.

In conclusion, we will be able to transfer ourselves into computers at some point. Most arguments against this outcome are seemingly easy to circumvent. They are either simple minded, or simply require further time for technology to increase. The only serious threats raised are also overcome as we note the combination of biological and digital technologies.

Functioning Of Natural Human Brain

The human ability to feel, interpret and even see is controlled, in computer like calculations, by the magical nervous system. The nervous system is quite like magic because we can't seeit, but its working through electric impulses through the body. One of the world's most "intricately organized" electron mechanisms is the nervous system. Not even engineers have come close for making circuit boards and computers as delicate and precise as the nervoussystem.The three simple functions that it puts into action: sensory input, integration, motor output.

Possibility

Many people believe firmly those we possess a soul, while some very technical people believe that quantum forces contribute to our awareness. But we have to now think technically. Really this concept appears to be very difficult and complex. First, it is helpful to describe the basic manners in which a person may be uploaded into a computer. Raymond Kurzweil recently provided an interesting paper on this topic. In it, he describes both invasive and non-invasive techniques. The most promising is the use of very small robots, or nanobots. These robots will be small enough to travel throughout our circulatory systems. Traveling into the spine and brain, they will be able to monitor the activity and structure of our central nervous system. They will be able to provide an interface with computers that is as close as our mind can be while we still reside in our biological form. Nanobots could also carefully scan the structure of our brain, providing a complete readout of the connections between each neuron. They would also record the current state of the brain. This information, when entered into a computer, could then continue to function like us. All that is required is a computer with large enough storage space and processing power.

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Workflow 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

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