The Future Technology Brain Chip Interference

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Abstract: The technology today is highly efficient and is been upgraded everyday. The technology is moving back to our roots to solve one of our biggest challenges that human beings face today which is the volume of data that produced and the insane and incurable disease people suffer from, and also to solve the next challenge is SPEED at which the data is processed. The amount of data that is produced over the past few decades are today producing it in 10-20 minutes. In the next decade it can be produced in 5 seconds, which is absolutely clear for every technology. A Human can no longer read and digest these information, every individual need serious help, these essential help is in the form of algorithm. It's basically taking the digital information and transforming them into useful information, as human brain functions. Human need adequate algorithms and they need machines. One of it is deep learning, this is what GOOGLE and MICROSOFT and many such companies investing huge amount of resources and many research on to how efficient this data can be processed and stored. It's going to be more important because everything is becoming digital around the world. For all this its necessary for BRAIN CHIPS that can do miracles in the field of technology and engineering science. As the world today is progressing towards this used data is a result of the fast progression towards digital practices of the world, such as online transaction, social media and accessing internet, downloading information, uploading information. In every process human beings follow is progressing towards digital, hence there is a urge for humans to process this huge data in themselves and that's the reason human being requires a technology that enhances our brain to process this data and which is why there is a research done on brain chip interface which will enhance the cognitive ability of brain and can also be used in health issues such as for people who suffer from neurological diseases like paralyzed, stroke, epilepsy etc.. It is also helpful for soldiers in many ways. INNOVATION of this new technology has opened up possibilities for better future.

Index: Super Human, Electroencephalography, Nano Technology, Adequate Algorithms.

I. INTRODUCTION:

The speed of data transmission has increased by multiples of millions. The time we have to make right decisions is shorter and shorter. As humans are facing a choice to new dark age they need technological revolution. Time to find new mankind it is clear that today's revolution needs deepest social transformation. Instead of wasting resources on solving momentary problems it's time to focus on technology of future which finds new source and energy. Human cognitive ability with brain chips implant. Brain chips interface is a massive set of interconnections in which the chip and the nerve cells of our brain interact with each other to transfer electrical signals from brain to computer or computer to brain via chip. In other words we can say that whatever brain cells say will be picked up by computer but it's a two way communication, that the computer can also communicate back to the chip by giving the instructions to perform the specific task. Machines that act like human brain sounds like science fiction. It's like fusion of neuroscience and engineering. Brain chips are build by using NANO TECHNOLOGY which aims at converting a human being into SUPERHUMAN. It has miraculous applications in the field of neuro science engineering and speed recognition. Its been a ground breaking innovation. The more the research, the more improvements today people suffer from neurological disorders which are deadly conditions they are suffering from. About one billion lives suffer from neurological disorders in every country, which accounts to seven million deaths every year. After several years of research many scientist believe that the BRAIN CHIPS INTERFACE TECHNOLOGY (BCI) can play a vital role in addressing this neurological issues. Brain chips interface can be implanted in human brain as its part which can mimic all the functions of brain mathematically, can record it and send it to computers. To be used by patients who lost control over movements of body because of neurological damage of brain. Just with the help of thoughts of human Brain. It is also intended to for Military purposes. It has endless applications. But also can bring world towards disaster if misused. Let's hope it brings peace to world and government just permits the people who really need it.

II. ELECTROENCEPHALOGRAPHY (EEG):

EEG is the device which records every single activity of brain through the electrical signals sent by nerve cells of brain. They record each pattern and image of neural connections and sends back to the computer via chip. There are different electric signals in neural networks of brain making different patterns for each activity a human brain does. If the patient says yes for a work then there will be different pattern if a patient says no through its thought again the computer receives a different unique pattern. After recording each activity it converts the brain signals to digital data and sends it to the computer. EEG is responsible to convert the electrical signals of the brain nerve cells to digital data and vice versa. Researchers have invented a EEG cap which records human brain functional signals.

Fig 1: EEG CAP 1

III. NEURAL NETWORK WITH BRAIN CHIP:

To know about brain researchers first learnt about how neurons are structured and what is the require that we have neurons and a lot of neural networks. Brain has many areas for every activity we do. The brain functions are carried out by neural networks which collect all the information from every individual cell body with the help of Nerve cell and connect each other forming a neural network in brain to process the activities a human does. The neural network is linked with brain chips electrically, the electrode sensors of brain chips are used to record each signal sent by brain. We can culture brain cells directly on top of chip and really exciting part is that they grow on chip with a tight electrical coupling. It carries out the algorithm through different networks to connect this we have synapses in the piece of brain like motor cortex, Spinal cord and sensory organs. In size of pin hair (as small as you can imagine), over 40 million synapses that connect to 30,000 neurons. Nerve cells are messengers between the cells they control algorithm.

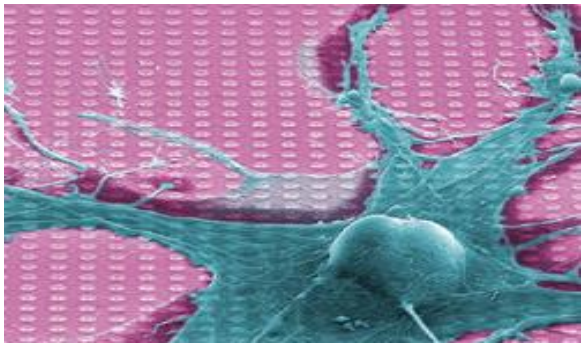

Fig 2 shown above is neural network 2

IV. EVOLUTION TOWARDS BRAIN CHIP INTERFACE:

Brain chip implants are know part of modern culture. In 1929 the device called EEG (Electro Encephalography) was invented by HANS BERGER in the field of human brain research which helped to record the human brain signals. When it comes to this topic we remember the works of JOSE DELGADO who implanted electrodes in animal brain and attached them to a “STIMOCEIVER”. In 1998 the researcher PHILP KENNEDY implanted the first brain chip in human brain to record brain activity. In 2001 JOHN DONOGHUE and his team at brown university researchers, cyber kinetics invented brain gate then in 2004 JONATHAN WOLPAW and its researcher at new York state invented a EEG cap then IBM invented a wireless Brain Chip Interface which is 4mm in size and has 5.4 billion transistors interconnected in chip, capable of stimulating 1 million neurons and 256 million neural connections. DARPA (The secretive research arm of department of defense) are planning to implant BCI in soldiers for many useful applications.

V. THE ELEMENTARY PARTS OF BRAIN CHIP INTERFACE:

- ***The Pedestal with chip:*** The pedestal is 2 cm in which a 4mm micro electrode array (brain chip) is connected to it. It records all the electric pulses of brain nerve cells and transfers it to signal amplifier.

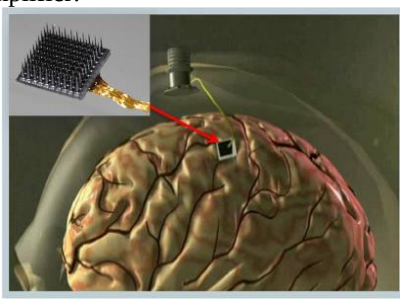

Fig 3: Shown above is PEDESTAL CONNECTOR 3

- ***Fiber Optic Cable:*** It receives the signals sent by chip and sends it to neural signal interpreter.

Fig 4: shown above is FIBER OPTIC CABLE 4

- ***Neural Signal Interpreter:*** It converts the brain signals to digital signals and sends it to computer, it can also convert digital signals into brain signals.

Fig 5: shown above is NEURALSIGNALINTERPRTE 5

- ***The Computer:*** It learns all the patterns made by the nerve cells of each particular activity that human brain does with the help of digital signals send by neural signal interpreter.

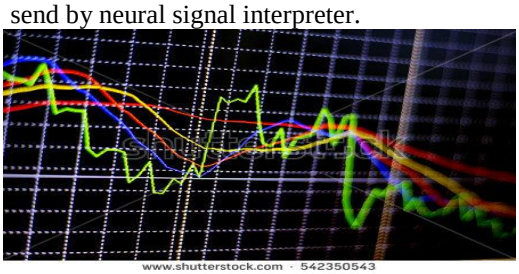

Fig 6: Shows the brain signals in computer 6

VI. HOW DOES IT WORK?

The chip can be implanted in the human brain. The extension wire of chip is connected to pedestal connector that records all the patterns made by neural connections that controls all the activities of brain. Then this connector sends all the signals to neural signal interpreter through fiber optic cable. The neural signal interpreter converts the brain signals into digital signals and sends it to computer; the computer mimics all the functions of brain activities and sends it to the prostatic device which helps patients to do movements just by the thoughts of the patient's brain.

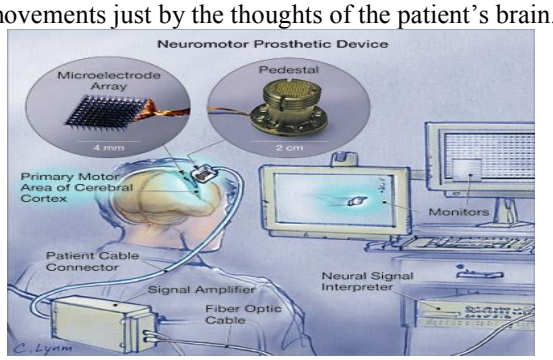

Fig 7: Shows NEUROMOTOT PROSTHETIC DEVICE 7

VII. ACHIEVEMENTS AND APPLICATIONS IN VARIOUS SECTORS:

a) Movement of paralyzed patients:

Brain chip implants helps in interaction of patients with computer to read patients mind which helps in automatic movement of paralyzed part. The patients with complete paralyzed body can interact by thoughts.

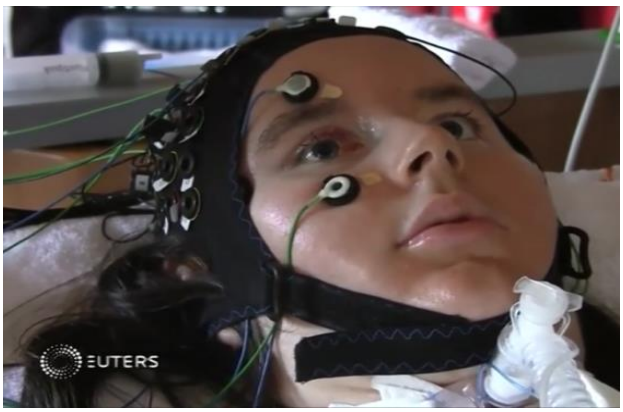

Fig 8: Completely Paralyzed Patient 8

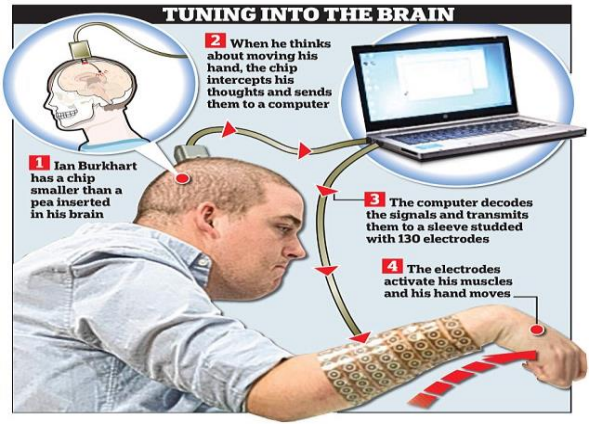

Fig 9: Shown above is paralyzed patient 9

- ***Telepathy:*** It is a invisible communication between two people with the use of brain chip interface.

Fig 10 Shown above is Telepathy 10

- ***Remote controlled animals:*** These are used for the animals like dog, rat, sharks etc…for military rescue missions. DARPA to neural implants in sharks. The shark's unique sensors can make use these implants providing the data in relation to enemy ship movement or under water explosives.

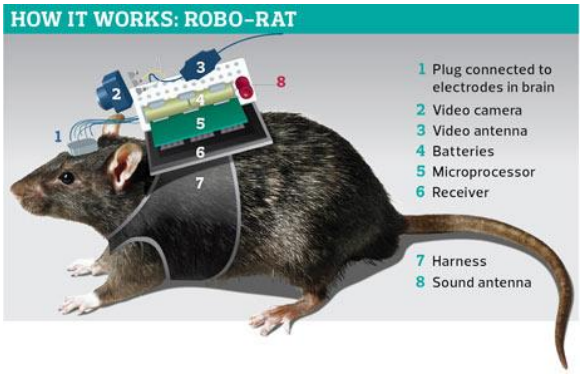

Fig 11: shown above is REMOTE CONTROL RAT 11

- ***Robotic Arm:*** The people who suffer from physical disorders like handicap who are unable to make movements of their body parts can move their hands with the use of robotic arm.

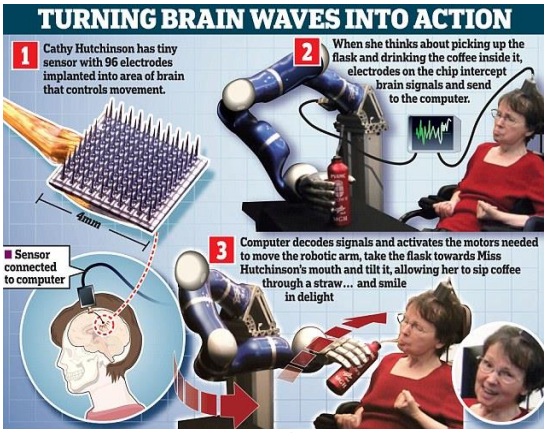

Fig 12: shown above is of robotic arm 12

- ***Prosthetic device:*** This device can be used by the patients who can't do their leg movements by using prosthetic device which is controlled by brain thoughts.


Fig 13: shown above is prosthetic Device 13

- ***Brain chip implant in soldiers:***

It can help solders with brain injuries. It's not been implanted in soldiers, the researchers have already been testing such device into the brain by volunteers. Implanting brain chips in solders will lock all the secrets of the military missions so when they are caught by enemies the secret information is safe. It will unlock the secrets of artificial intelligence and allow us to give machines the kind of higher level reasoning that humans can do. It can help soldiers returning back to home from work with traumatic brain injuries impacting memory.

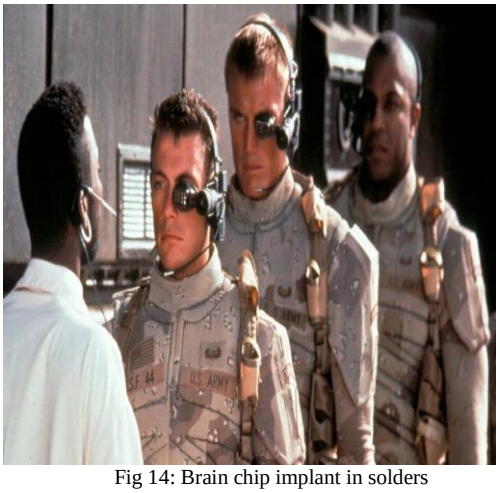
Fig 14: Brain chip implant in solders

- ***Expand Power of your mind:*** Brain chip implant in humans can expand the productivity of human brain to the higher extent.

VIII. BRAIN CHIP INTERFACE ADVANTAGES:

Reliable: It is consistently good at performance. It is trusted by researchers to implant safely in human brain.
Adaptive: It is essential for a human brain to expand the power.
Self learning: Brain chips can enhance memory to a large extent.
Contextual: Depending on the circumstances brain chips can be used effectively.
Personalized: Brain chips can be produced to meet patient's individual requirements.
Productivity: Brain chips very effective for human brain in increasing its cognitive ability.
Security: Brain chips can secure human memory without memory loss.

VII. DISADVANTAGES OF BRAIN CHIPS:

It is difficult to afford.
Risk of surgery.

VIII. CONCLUSION:

The invention of brain chip implant technology is boon for patients with neurological diseases its revolution in the field of engineering and neuro science. Brain chip technology which involves communication based on neural activity of brain. The results are spectacularly wonderful and unbelievable. The advantage of brain chips with nano technology will allow researchers for smaller and superior chips making brain chips technology less burdens some and more reliable option for people. More effective for restoring limbs function of patients. Rehabilitations for patients. Finally it has amazing endless advantages.

IX. ACKNOWLEDGEMENT:

The information and data used at various places are belong to the respective owners.

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