



Brain and Computer Work Alike: Binary Storage –Brain is Ram and Death is Shut-Down

Arya Tanmay Gupta
Ramanujan College (University of Delhi)
New Delhi, India
arya.tanmay.gupta@gmail.com

Abstract: - We humans are now-a-days continuously trying to develop a technology that will give artificial intelligence to machines. As I am studying a discipline course of Computer Science in University of Delhi, I also came across this thought. I also know a bit about human brain (or a general brain), though it comes under biology. I knew about some of the conclusions of biotechnology scholars after observing a working brain, thanks to Discovery Channel for this. I studied the Architecture Design of a Computer and found that it is similar to the working of a brain.

This paper contains similarities in the functioning of brain versus a computer, the difference in the output of their working, some of the ways and conditions to develop artificial intelligence, and the possible consequences regarding this.

Keywords: - human, brain, computer, architecture, design, artificial, intelligence, technology

I. INTRODUCTION

If analyzed, it will be found that human brain and a computer work alike. They store in binary. They work due to the flow of electric current. Actually, all organs of our body work and move because of the flow of current.[1][2]

Nerves and brain thoughts work due to the flow of current and thus brain produces a magnetic flux which is very less intense but can be (actually it has been) detected easily.[1][2]

But there is a huge difference in the results of the working of both.

II. GENERAL OBSERVATIONS ON BRAIN AND COMPUTER

Yes it is true that the computer works like a brain. It is clearly observed that

1. When brain is full of thoughts, it produces magnetic flux [1]. It can only be possible in the presence of electric current.

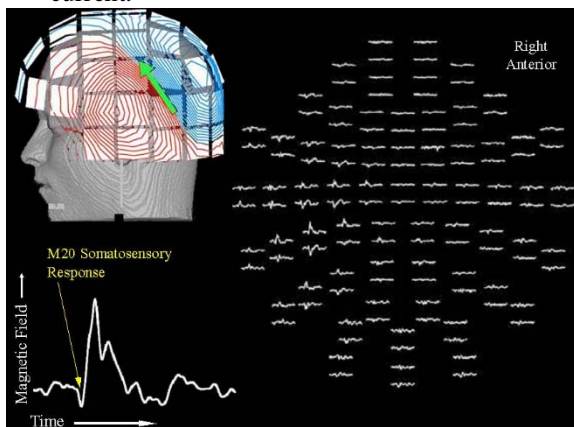


Figure: Magnetic field produced by brain – M20 Somatosensory Response. [1]

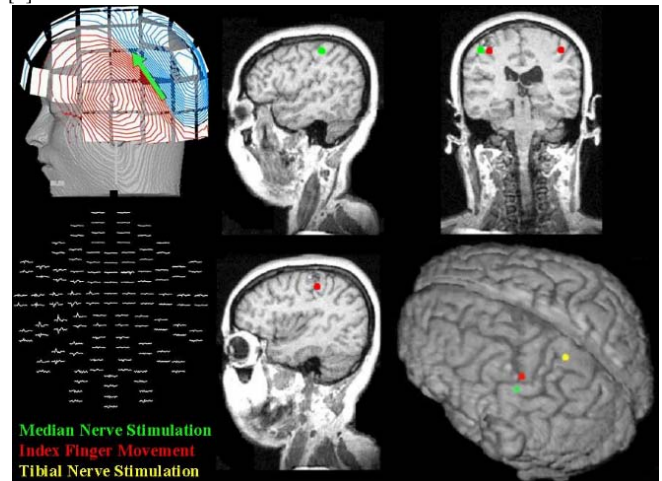


Figure: Magnetic field produced - Median Nerve Stimulation; Index Finger Movement; Tibial Nerve Stimulation. [1]

2. What we feel, see, do, all is due to the flow of electric current (although this current's magnitude is very small). Nerves work because of the flow of electric current. Current flows in them because of the flow of ions.[2]

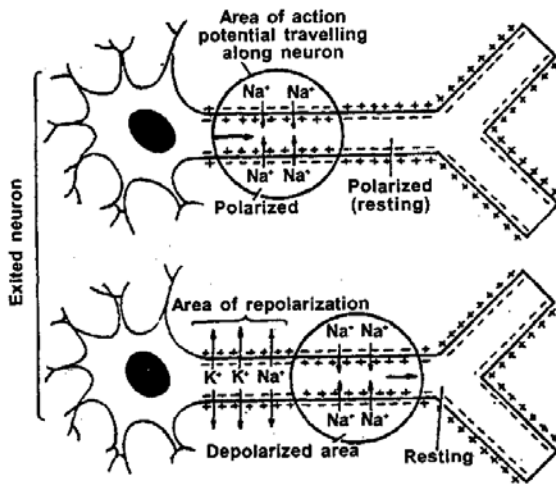


Figure: Transmission of nerve impulse through nerve fibers.[6]

The difference in the processing of brain and the computer is that, the brain stores as much as many times of data as compared to a normal computer. So ironically, but really, say for example during examinations, we have to search into a much higher amount of data to retrieve the appropriate data. That is why we are proved to be slower as compared to a computer.

And another point, we have various thoughts (or we can say processes – calculation and computation according to computer science) and deeds to execute at each point of time. Actually the main cause is that we do not train our mind(s) to be empty, so it is filled with thoughts unnecessary (generally). Whereas a computer executes everything but one at a time, according to the clock pulse and all. So it is much more systematic. It has nothing to do other than what the user tells it to do.

The computer has no feelings or intelligence so as to think of its own. It works on how we design it, and for only what we tell it.

Our mind stores almost each and every experience, incident, heard words, seen or felt things and also the points that what we learn from what is going on. But again, we cannot access the appropriate data too soon because of the hugeness of the amount of data, or we can say, the remembrances, memories, or recollections. But the computer stores only what we tell it to store. The computer cannot store experiences and memories. It will need a high amount of memory storage capacity to do so, which cannot be provided today.

We store data of experience and learn by what is going on, automatically, but computer does not do so. Actually, it does not have such a high amount of storage capacity to do this. So, it is not programmed to do so.

III. CONCLUSION

Our brain works just as a normal computer, or a normal computer is based on our own brain, as the brain came first, not the computer. But the main difference is that the

programming and architecture design of the brain is done naturally and in more advanced manner as compared to a normal now-a-days' computer.

Here comes probably a “new” definition of death. As a computer is said to be dead, or turned off, when there is no current in RAM. Similarly, death of life is absence of current in brain. That is why we can transplant even a heart but not brain. Because all the bad organs can be replaced, but brain cannot as brain controls all the processes of the body. If it is removed once, all processes will be stopped.

We can develop such a method using technology and biology so that brain can be made alive if current is re-induced in it. Any organs except the brain can be replaced because once the “RAM” of a body is removed, the body is dead. If current could be re-induced, we can replace brain too, but we need to transfer a huge amount of data in to the new brain after formatting it, only then we can get the same living being. And there is no such technology at present so that the current can be re-induced in brain. If we can do so, we may conquer death.

The data storage in our brain is at the molecular level. This is one of the most complex systems created by Nature. As a result of storage at molecular level, a single neuron handles a huge amount of data. [3]

At this we can say that if we want to give artificial intelligence to a computer or any other machine, we have to surely handle with data storage at molecular level, otherwise, we have to face the huge weight, space and the cost of such a machine. And off course, our programming should be much more advanced than what is today. And yes, we have to provide it with hormones or any alternative if we desire to give it feelings.

Science, especially computer science, is developing day-by-day. We can expect for an “artificial hormone” which will give feelings to our machines, say car, or an airplane, or our computers.

But it may be too dangerous. If a machine is given same intelligence as humans, it can do much worse than what a human being is practicing today.

IV. ACKNOWLEDGEMENTS

I give the credit, except me, to the shows of Discovery channel, which are full of knowledge, irrespective of the topic and subject, I watch and enrich my knowledge. They gave me knowledge about the basic what a brain does when data is being processed in it. And to my teacher of Computer Systems Architecture, Mr. Nikhil who taught me the architecture design of a simple computer.

V. REFERENCES

- [1] University of Utah, “What is Magnetic Source Imaging (MSI)?” <http://uuhsc.utah.edu/uumsi/what-is-msi.html>
- [2] National Science Teachers Association, “How do nerves work?”

http://www.nsta.org/publications/interactive/nerves/basics/how_nerve_s_work.html

[3] Paul Reber, “What Is the Memory Capacity of the Human Brain?”

<http://www.scientificamerican.com/article.cfm?id=what-is-the-memory-capacity>

[4] M. M. Mano, “Computer System Architecture”, 3rd Edition, 2008. Prentice Hall of India.

[5] W. Stallings, “Computer Organization and Architecture-Designing for Performance”, 7th Edition, 2008, Pearson Education/PHI, Inc.

[6] Blog at Wordpress.com, “Impulse One- Transmission of nerve impulse along the nerve fibre”.

<http://onlinesciencehelp.wordpress.com/2013/04/13/impulse-one/>