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Brain to Brain knowledge transfer for disabled with E-governance

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Abstract: Human brain is a unique chemical combination for every individual. A potential to update at real time to sustain in the updating environment is supported by human skeleton and the senses of our human body. Brain keeps data, information and knowledge about the human body and surroundings, which changes at real time. With growing population of India that comprises of 2.13 percent of disabled (approximately 21 millions) peoples, knowledge extraction, transfer is made possible with BCI (Brain Computer Interface). MRI (Magnetic Resonance Imaging) is another known technique used for information collection, which shall be further extended to identify the exact cause of the problem. One can also transfer knowledge using ANAPANSATTI, METTABHAVANA and KAYANUSMRUTI which are scientifically tested and practiced worldwide initially under supervision and regular practice. Brain stem with spinal cord with a unique combination of conscious and unconscious brain takes a lead role as a regular practice towards meditation creating a platform /receiver for knowledge transfer.

Keywords: BCI, MRI, Brain Stem, Spinal cord, Anapansatti, kayanusmruti.

I. Introduction

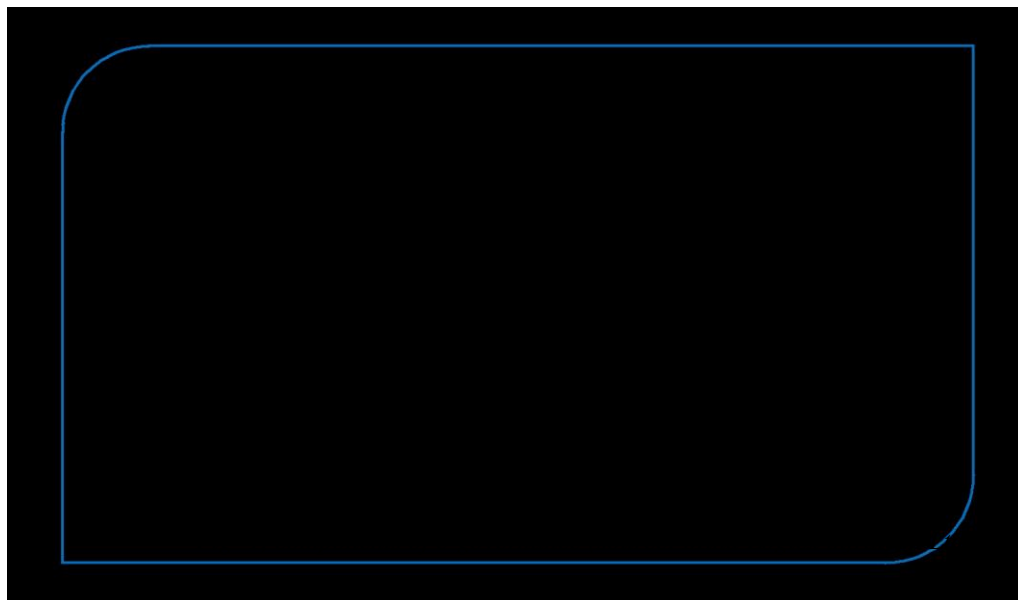
The current population of India as per the survey in 2012 is 1.22 billion (India online pages.com), out which 2.13 percent (approximately 21 millions) of the population is facing problems due to disabilities. From the list of problems in identifying a difference between data, information and knowledge, knowledge tracing, identification, knowledge acquisition storage and retrieval, knowledge transfer is one of the major problems faced in the current scenario due to noise and limited resources. Cloud computing, e governance, system based application software's are the agents which helps in knowledge processing and transfer at right place, to the right person in a given time frame. The paper provides a solution for brain-to-brain knowledge transfer basically for any of the disabled person (irrespective of disability) with the help of BCI (Brain Computer Interface) and meditation that includes ANAPANSATTI, METTA BHAVANA and KAYANUSMRUTI for personal knowledge management which shall be further used for knowledge transfer.

II. Overview

The following terms will help to understand the concept in better way:

- A. *Data*: Unorganized and unprocessed facts, that is ready to transform into meaning full information.
- B. *Information*: Knowledge is experience everything else is information.
- C. *Knowledge*: It is relevant information, available in right format at right time at a right place for decision making with previous experience.
- D. *e-governance*:

form the below figure-1, it is easy to understand the role of e- governance in diverse areas which require grate efforts and contribution from both the consumer and the government with dedicated team and not forgetting the amount of money invested for the tenure. Data and information security in diverse areas like finance, medical, engineering, research and so on with updating technologies like cloud computing and virtualization becomes a major issue at national level creating loop holes for intruders if not managed properly. It is bit a difficult task to identify knowledge at different levels, extract and process it for future use. As BCI is in its puberty, e governance shall contribute in the areas like knowledge storage, transfer and so on.



E. Brain Computer Interface (BCI)

This is an upcoming system in which a person with disability is tested for the exact cause by using available tools in medical science. On identification and after finalizing the procedure to solve the given problem, knowledge is acquired, enhanced and the required features are extracted using available algorithms.

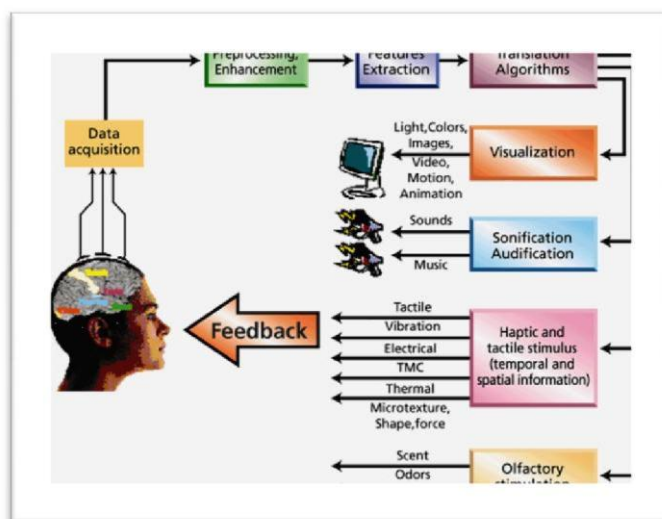


Fig-2 BCI Setup (RIKEN Brain science institute, issue no: 34, Dec 2006)

F. Meditation: This is a scientific proven technique which needs regular practice and guidance to turn our self as a receiver to acquire and transfer knowledge irrespective of geographical barriers time and natural calamities. The brain stem acts as a receiver after practicing the said methods regularly and under supervision. The five senses, conscious and sub conscious mind works together during knowledge transfer from one person to another. The methods shall be briefly summarized as:

A. Anapansatti: This has five steps. It starts with counting the numbers naturally. While you breathe in and out you need to count one, followed by two and so on. In second step count the number and then breathe till ten counts. Counting of numbers is stopped in the third step and you just need to concentrate on the air coming in and out of your body. Fourth step tells you to concentrate on the point where you can feel the air touch as it passes through your nose. And finally you need to concentrate on the point where you have felt it in your nose, nostril, and windpipe and so on. This basically increases the concentration power.

B. Metta Bhavana: The facts are such that love and affection for the family has become a business that leads to social imbalance. This method helps you to build friendship among yourself and for family, neighbors followed by enemy and a full universe. The practical implementation demonstrates the results.

C. Kayanu Smruti: This basically concentrates on the full human body at Neno level.

III. Elements of knowledge transfer

A. MRI scan (Magnetic resonance Image)

It helps to acquire knowledge and information using EEG (electroencephalogram) at atomic level, which is further enhanced and filtered for knowledge acquisition. The information gathered is in the form of image slice that is understood at signal level to enhance knowledge management.

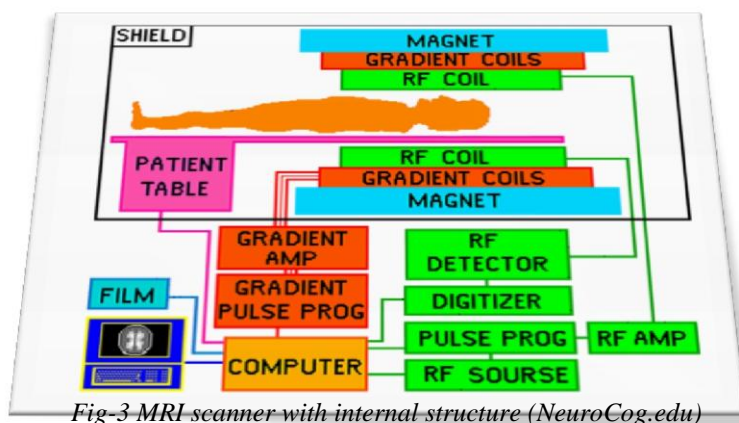


Fig-3 MRI scanner with internal structure (NeuroCog.edu)



Fig- 4-MRI Scan (science features- 16 August 2012.)

B. BCI

From the figure –2 it is easy to understand how the data and knowledge is acquires that is further processed for feature extraction using tool like MATLAB with suitable algorithms. Depending on the disability the knowledge is transferred to the next person using BCI system. The close look appears as under.



Fig – 4 (BCI hands on seminar, society for Neuroscience, Washington 2011)

IV. Conclusion

In this paper peer-to-peer knowledge transfer is discussed using BCI, MRI and 3 techniques of meditation to provide assistance for disabled people to transfer knowledge. This knowledge is saved in the system and. After undergoing preliminary test for exact cause, the patient is placed into the BCI setup and knowledge is transferred either by normal setup or a chip is placed on to the scalp of the brain by operation on rare cases. Both the methods fulfill the requirements of knowledge transfer with minimum or no distortion in signals. As BCI is in its puberty, e governance shall have a major contribution to make a setup available at larger scale. Here neither a particular algorithm nor a new setup is proposed which is intended for forthcoming endeavors.

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