Design Approach of Human Thought Controlled Empathy Device with Brain Signal

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Abstract - The main objective of the human thought controlled empathy device is to capture and store different emotional variations of the brain and to feel the same by another person. Human emotion is very difficult to determine just by looking at the face and also the behaviour of a person. The problem aims to EEG (ElectroEncephalogram) signals of relations of human emotions. The concentration and attention level are not available in the children and somewhere in the adults also nowadays. The main objective of this recognition is to develop empathy sensing device. The research methodology is divided into four categories such as both visibility and EEG data to extract at the same time from the respondent, the process of complete data record including the capture of images using the camera and EEG, pre-processing, classification and feature extraction. These are done at the same time to gather information about the features extracted to be classified using emotional intelligence techniques from emotional faces.

Keywords – Human empathy; Brain signal; EEG; Signal processing.

1.0 Introduction

Our brain is one of the most complicated and one of the most sophisticated processor available in the universe. According to the metaphysical terms brain is sometimes is also considered as a universe of its own. In our modern society we humans have been trying to create human feelings like love, pain, sorrow , sadness, happiness, nervousness , anxiety etc. artificially so that we can better understand ourselves. We humans have succeeded in creating humanoid robots, to send rockets to the moon and mars. The hardest thing is that we still cant be able to try to colonize other planets but the fact is that we still have not yet discoveries and the capabilities to use our brain. We all know that by a common misconception that human beings use only 2-3%of their brain but the real deal is that we only know and have explored only 2-3% of defined or be replicated is emotions. In theory our brain emits or is sensitive to 4 electromagnetic waves specially divided into categories known as

- Alpha
- Beta
- Gamma
- Theta

Now we can use Quantum physics in order to study how electromagnetic waves affect the different parts of the brain.

2.1 QUANTUM PHYSICS RELATION WITH BRAIN SIGNAL

Quantum physics deals with small particles and quantization. Considering the traditional Newtonian physics dealing with large particles, quantum physics or mechanics is related to small scale objects like atom and subatomic particles.

According to the first principle, human brain can be viewed entirely as either in particle or in wave form. The particle perspective presents brain in anatomical form. The wave perspective represents the brain in wave form. Waves of the brain can be classified into two main entities: i) brainwaves commonly detected or studied using electroencephalogram (EEG) or magnetoencephalography (MEG) and is based on electromagnetic principles; and ii) waves perspective of brain anatomical particles. The first wave or brainwaves can be presented as electric waves with energy or field in it.

A physiological principle presents a neuron that connects with each other by using electrical signals. The action potential travels along the axon and triggers neurotransmitter at the synapse, hence further electrical signal can be passed to other neurons. With electrical signal, there is a simultaneous presence of magnetic field, known as EMF communication. On the contrary the QF communication considers all brain elements such as waves, thus the energy is oscillating and perhaps in diffused pattern with more complex networks.

3.0 Methodology

The main objective of the human thought controlled empathy device is to capture and store different emotional variations of the brain and to feel the same by another person. This study aims at EEG (ElectroEncephalogram) signals of relations of human emotions. The main objective of this recognition is to develop empathy sensing device. To solve this issue the total setup can be arranged to make the depressed person happy. The variable brain wave might lead to huge risks to the internal parts of the brain leading to permanent damages like hemorrhage.
The requirements to build the empathy device are

The installer software installed on the computer. The goal is to control the process using EEG applications. Without the CD installer, the software cannot function. This software is used when the process of data collection done. Reading and data analysis cannot be performed if Microdog is not used in a computing device. EEG also cannot function properly. It also can be used only by one computer at a time. The measurements of the signals are performed using this equipment. EEG signals are important which should be taken carefully to avoid artefacts. The locations corresponding to electrodes on the subject are responsible to acquire main signal EEG readings. CONTEC KT88 3200 will be able to supply up to 32 channels of EEG under the international standard system for electrode placement. EEG gel used to support the placement of electrodes will be placed and then swept to connect properly on the head scalp where some gel flow between electrodes and skin. EEG cap placed on the scalp of subjects and is connected to the main system. Respondents were asked to act naturally and ordered them to stay in a comfortable and relaxed condition for a good reading with minimal disturbance and movement. Interrogation sessions and recording of EEG signal is carried out at the same time. Video cameras are used to capture facial expressions and reactions of respondents during the data collection process are run. The camera is used to investigate the relationship between the expression on the face of respondents with data. The results obtained from the data preprocessing, the EEG signals can be distinguished with each other or different emotions. EEG signals are recorded and the readings over time are right, with the situation existing rhythmic lines are consistent with the reaction of the emotion during the recording made.

The main unique feature is to change the human brain signal condition to be in better mental condition for a depressed person. The identification of the effected brain signal segregation using simulation approach to make a device to be empathetic. The emitted sound signals are not harmful for the human

beings. The existing medical headset devices have the facilities of producing stimulation towards the patient. But the proposed device can give the advantages to get relaxed whenever any person is in distressed condition as a therapeutic process with the needed sound signals with specific frequency values.

Acknowledgment

The authors of the paper are thankful for the support of the Narula Institute of Technology.

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