Design and Implementation of Brain Computer Interface Based Robot Motion Control

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Abstract

In this paper, a Brain Computer Interactive (BCI) robot motion control system for patients’ assistance is designed and implemented. The proposed system acquires data from the patient’s brain through a group of sensors using Emotiv Epoc neuroheadset. The acquired signal is processed. From the processed data the BCI system determines the patient’s requirements and accordingly issues commands (output signals). The processed data is translated into action using the robot as per the patient’s requirement. A Graphics user interface (GUI) is developed by us for the purpose of controlling the motion of the Robot. Our proposed system is quite helpful for persons with severe disabilities and is designed to help persons suffering from spinal cord injuries/paralytic attacks. It is also helpful to all those who can’t move physically and find difficulties in expressing their needs verbally.