Paper Title: EEG Based Detection of Three Hand Motor Imagery Task

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Abstract

Brain-computer interface (BCI) is a new technique which can enhance the connection between humans and machines. In BCI research, motor imagery (MI), which means imaging the motion without physical movement, has gathered lots of attention. There have been MI studies that detected the movement within the same upper limb such as hand opening-closing and flexion of the forearm. However, there is little research about MI related with different ways of picking things up. In this research, three hand gestures related with picking-up and release are detected: five-finger-extension, five-finger-grasping and two-finger-pinching. Since the three hand MI tasks have different difficulty levels when performing. The influence of performance difficulty is also discussed based on the three MI tasks. This research can be applied to support motor rehabilitation for stroke patients.