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국문 강연제목: 딥러닝을 이용한 뇌파 기반 뉴로네비게이션

영문 강연제목: Electroencephalography-Based Neuronavigation Using Deep Learning

Abstract

Various neurological disorders, such as stroke, Parkinson's disease, etc., are often accompanied by severe motor impairments. Recently, neurorehabilitation techniques based on transcranial electrical stimulation (tES) that utilize neuroplasticity have emerged to enhance the effects of motor function improvement. To maximize the positive effects of tES on motor rehabilitation, it is important to accurately locate the specific motor area on the scalp, called a motor hotspot. However, conventional methods for identifying motor hotspots require additional equipment such as transcranial magnetic stimulation (TMS) and electromyography (EMG). In addition, determining the location of the motor hotspot requires the technician's empirical judgment. Therefore, we proposed a deep learning-based automatically identifies individual motor hotspots using only electroencephalography (EEG), which can be an alternative to TMS.

Brief Biosketch

<Education & Carrer>

- Ph.D, Department of Electronics and Information Engineering, Korea University
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<Keywords of Research Interests>

Computational biomedical signal analysis; Machine-learning/deep-learning algorithm; Neuromodulation & rehabilitation; Human-computer interaction (HCI); Biometrics