

Music Stimuli Recognition from EEG Signals with Emotiv Epoc Headset

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Abstract

It is well-known that, music stimuli have powerful emotion trigger effect. When people listening to music, music induces motor system activities in their brain. Therefore, music can be used as a potential stimulus in electroencephalogram (EEG) based emotion research. The goal of emotion recognition is to explore how different kinds of stimuli (e.g. music) from the world around us influence our brain waves. In previous works, the determination of emotional states has based on subjects' feedback. However, this approach is unreliable almost in all cases because emotional states are changing rather slowly and they are equivocal. In this study we try to recognize music-induced electroencephalogram patterns by shallow artificial neural network from the popular Emotiv Epoc+ sensor's signals. This article presents the data acquisition conditions; the efficiency of the neural network with different hyper-parameters; the effectiveness of Emotiv Epoc+ over the Neurosky Mindwave device.

Keywords: Artificial neural network, digital filtering, Emotiv Epoc+, music stimuli, Neurosky Mindwave

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