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EEG Affective Modelling for Dysphoria Understanding (Conference Paper)

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Abstract

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Dysphoria is a state of dissatisfaction, restlessness or fidgeting. It is a state of feeling unwell in relation to mental and emotional discomfort. If this state is not carefully handled, it may lead to depression, anxiety, and stress. To date, 21-item instruments of Depression, Anxiety and Stress Scale (DASS) is employed to measure dysphoria. Although DASS provides a quantitative assessment of the human affective state, it is subjected to interpretation. To complicate matters, pre-cursor emotion and pre-emotion of the participants can result in biasness of the DASS report. Hence, a more direct method in measuring human affective state by analyzing the brain pattern is proposed. The approach can also address the dynamic affective state which is needed in detecting dysphoria. Brain waves pattern are collected using the electroencephalogram (EEG) device and used as the input to analyze the underlying emotion. In this paper, relevant features were extracted using Mel-frequency cepstral coefficients (MFCC) and classified with Multi-Layer Perceptron (MLP). The experimental results show potential of differentiating between positive and negative emotion with comparable accuracy. Subsequently, it is envisaged that the proposed model can be extended as a tool that can be used to measure stress and anxiety in work places and education institutions. © 2018 IEEE.

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Affective Space Model | dysphoria | Electroencephalogram (EEG) | Emotion | Multi-Layer Perceptron

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