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Non-invasive assessment of affective states on individual with autism spectrum disorder: A review (Conference Paper)

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Abstract

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Individuals with Autism Spectrum Disorder (ASD) are identified as a group of people who have social interaction and communication impairment. They have difficulty in producing speech and explaining what they meant. They also suffer from emotional or cognitive states requirement that stance challenges to their interest in communicating and socializing. Hence, it is vital to know their emotion to help them develop better skills in social interaction. Emotion can be derived from affective states and can be detected through physical reaction and physiological signals. There are numerous known modalities available to detect the affective states either through invasive and non-invasive methods. In order to evaluate the affective states of individuals with ASD, amongst the methods used are through electrodermal activity (EDA), electromyographic (EMG) activity, and cardiovascular activity (ECG) and blood flow analyses. Though considered non invasive, these methods require sensor to be patched on to the skin causing discomfort to the subjects and might distract their true emotion. We propose non-invasive methods which is also contactless to address the problem to detect emotion of individual with ASD that is through thermal imaging. Through the impact of cutaneous temperature in blood flow, thermal imprint is radiated and can be detected in this method. To date, no research has been reported of the use of thermal imaging analysis of facial skin temperature on the individuals with ASD. In this paper we will justify the method and also discuss the merits and demerits of other methods. © International Federation for Medical and Biological Engineering 2016.

Author keywords

Affective states Autism Emotion Facial skin temperature Physiological signal

Indexed keywords

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