MIIEx2017

Melaka International Intellectual Exposition

PROGRAMME ABSTRACT

"Bridging Gaps with Creativity for Future Sustainability"

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EMOTION ANALYSIS FOR DIAGNOSTIC OF AUTISM SPECTRUM DISORDERUSING ELECTROENCEPHALOGRAM SIGNALS

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Abstract

Learning is a lasting change in behavior that results from experience. An important element during learning is emotion. During happy time, perception is biased in selecting happy events, likewise for negative emotions. Similarly, while making decisions, human are often influenced by their affective states. Autism spectrum disorder (ASD) disease usually associated with learning disabilities among children. ASD patients have normal intelligence and can talk; however they usually misinterpret the emotion of what they have seen or felt, unlike normal children. Currently, autism diagnosing in Malaysia still needs to be performed by psychologist, psychiatrist, neurologist, developmental pediatrician, or similarly qualified medical professional. There are also no medical tests performed on the subjects, the diagnosis is made based fully,on the subjects history and symptoms. An invasive method such as EEG is proven to characterize emotion of a person. The objective of this research is to diagnose ASD patient based on emotion analysis of brainwave pattern when the person being stimulate with certain emotion state using EEG signals. The analysis involved three emotions i.e. sad, happy and neutral. Using machine learning approach, the data are train both for normal and ASD patients. Comparison are made between ANN and SVM method. The testing result shows high accuracy up to 90.5% using ANN for neutral emotion.