An Approach to EEG based Emotion Recognition using Machine Learning

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Abstract. Emotion is a complex experience of consciousness, bodily sensation, and behaviour that reflects the personal significance of a thing, an event, or a state of affairs [1]. There is a wide variety of human emotions, and they are very diverse things. It is changing from time to time, people to people according to their background. There are different kinds of emotional recognition methods like facial recognition and speech recognition. In the proposed system emotions are detected using Electroencephalography (EEG) signals. EEG signals are brain signals. Emotion recognition using EEG signals is more accurate than other emotion recognition techniques used. EEG signals can be measured using EEG headbands and they are divided into categories according to their frequencies: Delta, Theta, Alpha, and Beta. Emotions can be divided into different categories. In this study, emotions are categorized into three major parts: positive, negative, and neutral. In the proposed system, Microsoft Azure ML Studio has been used to build, train and visualize the system. Microsoft Azure ML studio is a workspace that is built for creating, build and training machine learning models using without code or low code. In this research, the authors have used an already predefined EEG dataset that is freely available on the internet. The author's goal in this research was to build a system that can recognize emotion using brain signals.

Keywords: *Emotion Recognition, EEG signals, Machine Learning, Azure ML Studio*