

**A STUDY ON EMOTION CLASSIFICATION METHOD BASED ON BIO-PARAMETERS DATA MEASUREMENT BY RANDOM FOREST ALGORITHM**

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**ABSTRACT**

Emotion is a state that combines feeling, thoughts, and behavior as a people's psychophysiological reactions to external or internal stimuli. Emotions play an important and vital role in the daily life of human beings because emotions as a fundamental component of learning, cognition, memory, perception, problem-solving, and human experience. It affects human decision-making processes and the status of humans physiologically and psychologically. The importance of emotion motivates researchers to develop automation methods for recognizing emotional expression. There have been many studies on the classification of emotions using bio-parameters with a combination of different bio-parameters, emotion classification, emotion classifier, and an accuracy value.

In this study, there are two classifications of emotions using the random forest algorithm, namely based on bio-parameters and stimulus, and based on bio-parameters and questionnaire data, obtaining accuracy of 70.83% and 75.00%. This emotion classification method can be developed to improve accuracy by increasing the amount of the data, improving the instrument's consistency to reduce the lost data, using a more appropriate stimulus to the respondents' culture, using the best combination of classifier parameters, adding other bio-parameters to get maximum accuracy.

**Keywords:** *emotion classification, bio-parameters, machine learning, random forest*