ABSTRACT

Facial expression generally is one of non verbal interaction in human as result of facial muscle change due to emotional state. For a decade, researches have conducted research aimed to identify emotional state. In education field, emotional condition and students' motivation can influence the learning process, both directly and indirectly.

In this Final Project, a system is designed that can classify the types of facial expressions. This system take the face image as the input image. The image will be processed using MATLAB program through several stages including preprocessing, feature extraction using Fuzzy Local Binary Pattern (FLBP), Weber Local Descriptor (WLD), and the classification process using Support Vector Machine (SVM). At preprocessing stage, face detection is performed using Viola Jones Algorithm, cropping the detected face, and resizing to resolution of 134 × 114 pixels.

This study aims to facilitate the classification of facial expressions types. Facial expressions will be divided into seven classes, which are happy, sad, angry, surprise, fear, disgust, and neutral. The total data is 203 data, with 133 training data and 70 test data. The results of this study have an accuracy of 92, 8571%, precision of 92,8571%, recall of 92,8571% and computating time of 5,6405 seconds.

Keywords: Facial expressions, Fuzzy Local Binary Pattern (FLBP), Weber Local Descriptor (WLD), Support Vector Machine (SVM).