ABSTRACT

Detecting human movement lips is not an easy job, especially because detecting lip is influenced from the shape of the lips and should identify the keywords that are more specific to predict the letters on the lip movement. The discussion on the introduction of vowel detection using classification by Neural Networks had previously been done and have achieved an accuracy of 70.5%. Therefore in this thesis the author do the simulation and analysis of the introduction of vowel on the lip movements using different methods.

The purpose of this final project is to design an application for detecting the movements of lips in terms of recognizing vowel alphabets into text. The system is designed with the aid of Matlab 8.4.0 (R2014b). The process in designing the program of is started from the taking of video of alphabets vocally in offline mode, then the preprocessing and characteristic extraction is done with Independent Component Analysis (ICA) frame per frame. And finally classified with the support vector machine (SVM)

The output of the system is the recognition vowels a, i, u, e, o. The system has been designed to have an accuracy rate of recognition of the 5 vowels based on the feature extraction. The level of accuracy is based on its distinguished characteristics of distances at capturing video from camera. The lowest amount of accuracyin vowel a is 66.67 % and the highest amount of accuracy vowel e is 100%

***Keywords**:* digital video processing,*Independent Component Analysis* (ICA), *Support Vector Machine* (SVM)