ABSTRACT

In musical world, human voice is the important part beside the musical instrument. Human have different voice types that can be differentiated into two big classes, there are man and woman voice type. Man voice type can be divided into tenor, bariton, and bass. Woman voice type can be divided into sopran, mezzo-sopran, and alto. Generally, determination of human voice type done manually, it still depends on vocal coach and musical instrument (for choir group determination, generally). In previuos research, experiment has be done to detect voice type, but the result give bad accuracy.

Making of detector system of man and woman voice type in this final project, using Mel-Frequency Cepstral Coefficient as feature extraction method that represent timbre analysis best. Result of this extraction give the characteristics that differentiate each voice type. Besides that, MFCC result can give information about gender difference from each voice type which is also used as info for classification process. Pitch info also used to support classification process because human voice data are recorded in certain pitch. To classify feature extraction result, the best hyperplane is searched by using Support Vector Machine method which is used as feature separator between classes.

Testing result in this final project show that system can detect man and woman voice type with the best accuracy 80,08%. It can be stated that this system work good enuogh because can reach the expected accuracy, however it still need developed to get maximum result.

Key words: voice type, MFCC, SVM, timbre