

ABSTRACT

With the increasing capacity of storage media, the more files can be stored, for example an audio files. The more files stored in storage media creates difficulties when searching the file. Voice commands can be used in a search system for audio files / songs. Singing voice which is a combination of intonation and rhythm of speech and the right melody can be used as an input for voice command sistem to find an audio files. Therefore, a system that can recognize human voices singing is needed, and the results can be used to find an audio files.

This final task has researched how to recognize the singing voice that can be used to search an audio files. Mel Frequency Cepstrum Coefficients (MFCC) and Spectral Feature, which consists of the spectral centroid and spectral flux, have been used as a Feature extraction methods. MFCC method is a method that adopts the ability of human auditory perception system. While the method of Spectral Feature extracting features of the singing voice in the frequency domain. The last, Artificial Neural Network Self-Organizing Map has been used to identify patterns, determine the class, and classify singing voices.

The results have been achieved is a system that can identify the singing voice as an input to the audio file search system with a maximum 99.6% accuracy rate for non-real time system and 81.53% accuracy rate for real time system. Singing voice signal which has been processed is the singing of five different songs and input on the speech recognition system is the voice singing at the beginning of the song with a maximum duration is 5 seconds.

Keywords : Mel Frequency Cepstrum Coefficients, Spectral Feature, Spectral Centroid, Spectral Flux, Jaringan Syaraf Tiruan Self Organizing Map