

Abstract

Music is a beautiful combination of rhythm that make we enjoy to hearing. Music usually composed of several music instruments. The combination of the instrument makes the music sound good because they are makes harmony realation with the another. So with regular hearing, it would be difficult to separate the sound of each instrument contained in a song. In fact, for lovers of music, watch and learn the sound of an instrument of a song into a musical notes. Therefore, the separation of several instruments will be made of a song. Some instruments that are the focus in this study is the piano, drums, bass and guitar. For the preprocessing and feature extraction process method will be used Mel Frequency Cepstral Coefficient (MFCC). MFCC is a method to map the frequency of the signal into the mel scale. MFCC parameters can simplify the content of the voice signal into cepstral coefficients, and then mapping of the coefficient mel having a linear frequency response of less 1khz. This is similar to the character of the frequency response of the human ear. After feature extraction is done, then the next stage will be the classification of musical instruments uses Fast Independent Component Analysis (Fast ICA). Fast ICA can be used to separate the signals are mixed as in the recorded music in the form of a signal is stereo or mono signal. And separate the signal accuracy is affected by the number of iteration and gradient value at the time of the search matrix ascent W. On combining MFCC with Fast ICA method, the results obtained the highest MOS is 2.9. This is because of MFCC reduce the signal to much so the information that ICA needed is missing.

Keywords: Music, Instrument, MFCC, FastICA, Classification