Abstract

Chord detection, beat tracking, key detection, and chord-sequence optimizer are methods for chords detection, using audio file as input then converted it to digital signal and processed further to get an output of possible chords which is being played in the audio file.

The process of chords detection begins with an input of audio file. The files then converted to a digital signal and normalized. The normalized signals used as input for beat tracking to find the onset position in the signals. The onset needed for chord detection and key detection algorithm to get the possibility of chords that being played based on the key. The chords then go to chord-sequence optimizer to get the most suitable combination of possible chords that being played in the file.

This research use mp3 file as an input. The testing focuses on how accurate the system to detect chords, begins with how the system detect the onset, how the system separate the signal based on the onset that has been detected, what is the effect of key detection to the system, and how the system detects the chords from files with combination of chords and melody. From the result of the test, system can detect the onset using beat tracking algorithm and separate the signal based on the onset. Key detection can affect the result of chords that has been detected, it may result a false detection on file that using combination of chords that is not one of the chords combination within the base key. Systems can detects chords from file with combination of chords and melody, but it's still inaccurate.

Keyword: chord detection, key detection, beat tracking, chord-sequence optimizer, onset.