Abstract

Many people can play music but not susceptible to recognize chords composition from the song that they want to play. If the song is quite popularm it will be easier to find the chord composition through the internet, But sometimes, the quality of the chords produced by an amateur leaves much to be desired, would be more difficult if the song is not popular. The solution to these problems is to use the chord recognition application that can directly identify the chord composition of sound files. The Chord recognition is a case of pattern recognition. Chord recognition system typically consists of three main processes. first, determination segmentation of song. Second, extraction chroma feature according to the segmentation. Third, the proces of pattern recognition to determine the proper labelling of each segment.

Many research of automatic chord recogniton with a wide variety of methods are used, some of which is improvement of Pitch Class Profile (PCP). This final project describes chord recognition system based HMM (Hidden Markov Model) with DNCOF (Doubly Nested Circle of Fifth) approach. There are two versions of HMM in this system, trained-HMM and untrained-HMM. On trained-HMM, chord model are trained using 180 songs of The Beatles. On untrained-HMM use chord templates as chord models. Chord models used in this system amounted to 24 chords which consists of 12 tones with two combination of major and minor. DNCOF used as the transition probabilities in HMM systems. In this recognition, the song is extracted into chromagram and task of this recognition is to fill chord labels in every chromagram frames.

This final project evaluates how DNCOF influence the accuracy of the two chord recognition system based on HMM where the best scenario is DNCOF with untrain-HMM that produces accuracy 96.94%. And also we evaluated the comparison between the trained-HMM and untrained-HMM where both accuracy have close enough each other.

Keyword: Chord, PCP, HMM, DNCOF, Chromagram.