ABSTRACT

At present, the fingerstyle technique is very popular among Indonesian acoustic guitar players. This technique makes the guitar capable of producing chords, melodies, and percussion sounds as in the band's music composition. The limited hearing ability in the form of insensitivity to tones makes it difficult for guitar players to explore the composition of chords and melodies in fingerstyle music. Therefore, the detection of chords and melodies in fingerstyle music is needed to facilitate the guitar player in examining the composition of the music.

In this Final Project, a system that can detect chords and melodies in fingerstyle music has been created. The data used as training data in this system are 355 chord recording samples and 125 single tone recording samples. The data tested on this system in the form of 8 fingerstyle music without sustain which was re-recorded 5 times and 3 fingerstyle music with sustain. The methods used in this system are Onset Detection, Discrete Wavelet Packet Transform (DWPT), Welch's Method, and Pitch Class Profile (PCP) to extract chord and melody signal characteristics through audio signal processing. Furthermore, the data is classified using the K-Nearest Neighbor (K-NN) method.

The results obtained from this Final Project are systems that can classify guitar sounds into two types, namely chords and melodies, and can classify the types of chords and the types of tones in melodies contained in fingerstyle music. This system can produce an average detection accuracy rate of 83.11% on 40 fingerstyle music without sustain.

Keywords: *Fingerstyle, Onset, Discrete Wavelet Packet Transform, Welch's Method, Pitch Class Profile, K-Nearest Neighbor, Chord, Melody.*