ABSTRACT

Music is a sound of reflected note where the frequencies are fixed. Human frequently enjoy music by listen to it and then play it. However, human has a limited sense of voice. Not everyone can listen to the voice of a note and then play it exactly. Therefore, the writer has made an application to display guitar chord from the sound of guitar record, so the user of this application can know the formed chord of the record when it's being listened.

In this Final Assignment, the system use the guitar recording audio file in *.wav. The audio signal is being extracted by using Harmonic Wavelet Transform (HWT) algorithm where the audio signal is being represented in high resolution time-frequency domain. Then the frequency result of the extraction is being analyzed with Self Organizing Map artificial neural network to determine the formed chord of the guitar recording audio file.

In this research, the examination has been done to know the system accuracy, which is the exactness between the identified chord by the system and the real chord. The accuracy level is being determined by the amount of the expected chord. The results of the examination give the system accuracy as 72% with epoch, decomposition level and Self Organizing Map artificial neural network parameters. These results show that the using of Harmonic Wavelet Transform (HWT) algorithm and Self Organizing Map artificial neural network to identify guitar chord from guitar recording audio file is good enough.

Keywords : chord, Harmonic Wavelet Transform, wav, Self Organizing Map