

ABSTRACT

Tone is a uniform sound. In writing, tone is represented by notes or notations. Translation of tone into notations require good hearing and good knowledge about the tone. Human hearing is able to distinguish each tone, but to represent the listened tone into a right note is not easy. Tone usually produced by musical instruments, for example is the piano. Piano is a musical instrument that sounds coming from the plucked string by a lever which is driven by piano keys each time pressed. Producing the right tone is needed a tuning on the piano strings. Not everyone is able to tune and measure the accuracy of the piano string tone using the sensitivity of the ear only. So it needs a system which is able to analyze the tuning's quality of the piano's strings.

In this final project, it builds a system that is able to recognize a single tone piano and analyze the tuning's quality of the piano's strings using JST-SOM method. The system extracts the single tone of different piano into two kinds of characteristics namely Fundamental-FFT and Harmonic-FFT. Two kinds of those features are used as inputs in the JST-SOM method so as providing output in the form of notation and the system provides output in the form of percentage of the tuning's quality of the piano's strings.

In the system that using JST-SOM is obtained a maximum performance 100% for accuracy of tone detection and 99,48% for accuracy of tuning quality analysis. So it can be concluded that the JST-SOM method can be used as a method for classifying a single tone piano because its performance is quite good.

Keyword : Tuning, Tone, Piano, Real Time, JST-SOM