

ABSTRACT

Tone is a sound that produced by a source of sound that vibrating and have a regular frequency. Frequency can be measured by counting the quantity of vibrations in a second. The higher frequency, then also resulting the higher tone. For someone who just learning a saxophone will definitely get a trouble when looking for the right tone in a song. Because, it's required the sensitive hearing when to determine a tone that looking for.

This project was made an application system that can be identified a tone that is being played on a saxophone. STFT is the development algorithm of the FFT (Fast Fourier Transform). STFT (Short Time Fourier Transform) provide solutions based on "the window" that will filter the sounds signal. STFT as forming characteristics of maktriks, and as a tool that can be used to analyze the signals of non-stationary (i.e. signal that the content of the frequency varies to time). STFT has ability to separate various characteristics at different scales. Back Propagation, method of Neural Networks (ANN), is used to identify the type of tone on the saxophone.

The method has the best performance with the highest accuracy in detection of tone, in the offline phase is STFT method, with each specifications: threshold = 2.000, can produce 80.1% accuracy at the level of SNR = 0dB, 10dB, 20dB and 30 dB. As for 10 times experiments with each tone frequency at the online phase with and combined method STFT and ANN, can produce 76.6% accuracy.

Keywords: Tone, Saxophone, Short Time Fourier Transform, Back Propagation Neural Networks