ABSTRACT

Audio compression is quite pupular solution to be used for storage and real time access problems. Compression technique optimal used by pay attention to several aspects to produced lossless and lossy compression technique. There is a new compression method called CS (Compressive Sensing). CS (Compressive Sensing) is an sampling method which the signal acquisition and compression are done at the same time.

This study aims to analyze the comparison of a compression system on Saxophone tones using CS (Compressive Sensing). CS (Compressive Sensing) consists of two steps that is the process of compression and reconstruction. Records in * .wav will be compressed using the DST (Discrete Sine Transform) and DCT (Discrete Cosine Transform) and reconstructed using the OMP (Orthogonal Matching Pursuit) method.

Compressive Sensing system performance in this final project is gained by conducting test to take several parameters such as the level of SNR (Signal to Noise Ratio), MSE (Mean Square Error), computational time and MOS (Mean Opinion Score). In this test the best SNR value obtained with DST without using noise is 52.30 dB and the best SNR value obtained with DST using noise is 29.96 dB. Then the best SNR value obtained with DCT without using noise is 52.31 dB and the best SNR value obtained with DCT uses noise 30.30 dB. The best MSE value obtained with DST without using noise is 0.0000559067 and the best MSE value obtained with DST using noise is 0.001022543. The best MSE value obtained with DCT without using noise is 0.0000068456 and the best MSE value obtained with DCT uses noise is 0.0009489467. It can be concluded by comparing the results from testing that DCT is better than DST.

Key words: *Compressive sensing, Discrete Sine Transform, Discrete Cosine Transform, Orthogonal Matching Pursuit.*