

ABSTRACT

Today along with the development of the times, the exchange of information and communication is very easy to do through the internet. We can easily access or get the informations we want by downloading it. either in the form of data, voice, video, files and so forth. One of the efforts made to protect the copyright of a data, especially audio data, is to use watermarking techniques. Audio watermarking is one type of watermarking that is used to insert confidential data (wátermark) into an audio file. By doing this insertion, it can protect ownership from a copyright.

In this final project designed a stereo based watermarking system using QIM (Quantization Index Modulation) method for embedding watermark and CS (Compressive Sampling) as a method used for signal compression process. Then another method like LWT (Lifting Wavelet Transform) is used to convert the audio hosts into multiple sub-bands, FFT (Fast Fourier Transform) to convert signals into frequency domains to resist later attacks with SVD (Singular Value Decomposition) to represent audio hosts in matrix form and increase the robustness of the system.

The result of this Final Project use CS compression ratio of 75% and obtain the average BER value of 0.249 from the test conducted on five types of audio, namely voice.wav, piano.wav, guitar.wav, drums.wav and bass.wav which has imperceptibility, capacity and robustness which is well indicated from the average value of SNR is worth 29.4379 and the average value of 2871.094 bps and has the quality of system resistance to various types of attacks on five types of audio used such as LPF, resampling, linear speed change and time scalling modification.

Keywords : *Watermarking, Audio Watermarking, CS, QIM, LWT, FFT, SVD.*