

ABSTRACT

Audio watermarking is a technique to embed watermark into audio (host). This is a solution to protect a media, especially audio from copyright infringement. Watermark usually contains with information about the audio ownership, so other people cannot modify, distribute or admit as owner of the audio.

Watermark can embed in time or frequency domain, each domain has advantages and disadvantages. Watermarking in time domain is easier to be implemented, but watermarking in frequency domain has higher robustness than time domain. A good watermarking not only must has good imperceptibility, but also good robustness. So, in this final project watermarking in frequency domain is purposed. Many methods of audio watermarking have been researched, in this final project audio watermarking based on Discrete Wavelet Cosine Transform and Singular Value Decomposition (DWCS) with Quantization Index Modulation method is implemented. Then, it is optimized using Genetic Algorithm.

The results of this research are we can prove that Genetic Algorithm can obtain better performance for audio watermarking than unoptimized audio. The good parameters for an audio from optimation using GA, are not good parameter for others. So, if another audio needs the good parameters, they have to optimize using Genetic Algorithm. And also this research obtain good parameters for hiphop music that robust to LPF, BPF, speed change, time scale modification and mp3 compression attacks with SNR 25.8260 dB, ODG -0.8358, and capacity 1.0767 bits/s.

Keywords: *Audio Watermarking, Discrete Wavelet Transform (DWT), Discrete Cosine Transform (DCT), Singular Value Decomposition (SVD), Algoritma Genetika, Quantization Index Modulation(QIM).*