

ABSTRACT

In the development of digital technology very rapidly, enables internet users to access, copy, and upload a digital media information such as text, images, audio, and video on the Internet. Ease is what makes providers and owners of digital audio content concerned with rampant piracy committed by some people who do not have a right to the content. One of the right solutions to solve the problem is to use watermarking digitak techniques.

In this final project the watermarking process using LWT (Lifting Wavelete Transform), SVD (Singular Value Decomposition), QIM (Quantization Index Modulation), and Genetic Algorithm. Audio in this research using format (wav.file). The audio host will be via LWT method which serves to separate the audio host into the low signal domain and high signal to determine where the watermark data insertion is inserted. Then in the SVD process it is tasked to provide resilience to the insertion scheme used. In the insertion process will be done using QIM method which is then tested with several attacks such as BPF, resampling, time scale modification, and others. Then the results will be optimized using genetic algorithm in order to get optimal results.*

Optimization obtained the most optimal parameters that produce ODG = -1.05193, SNR = 61.89326, BER = 0, capacity = 75 and with decomposition level 1, frame length 32, threshold of 0.008, 32 bit audio depth and QIM quantization 10 bits. The type of attack used is time scale modification.

Keywords : *Audio watermarking, Lifting Wavelet Transform, Singular Value Decomposition, Quantizing Index Modulation, Genetic algorithm.*