

ABSTRACT

The development of information technology has been growing rapidly, can facilitate the exchange of digital data. It causes the process of exchanging information becomes less secure. Therefore to maintain the confidentiality of information, other methods are needed to facilitate it. Using the techniques of digital watermarking.

Watermarking is a method of embedding the digital data so as to protect the rights. With this information the owner will be more secure when submitting the information, without having to worry about damage to the information. Watermark could be a logo, a signature or audio. In this proposal will be using SWT-QRD-QI-Algen.

SWT (Stationary Wavelet Transform) is an insertion process that converts short signal produces an output signal intact as much as several levels of the host audio. QI (Quantization Index) is an embedded watermark in a way quantize the data host to a value corresponding to quantizer referred by the watermark, the quantization thresholds will not cause large distortion in the audio watermarked. Then do algen optimization (genetic algorithms).

In this final project there are 2 times optimization on rock audio, so there will be 2 parameters highest. In resampling attack with parameter $nbit = 1$, $thr = 4$, $nframe = 4096$, $N = 1$ and $bit = 16$ with the result $ODG = -3.5471$ and $SNR = 13.30464$. In the MP3 compression attack with parameters $nbit = 3$, $thr = 2$, $nframe = 4096$, $N = 1$, and $bit = 16$ with the result $ODG = -1.0302$ and $SNR = 25.19222$. The use of genetic algorithm in this method is able to optimize the insertion parameters to obtain better audio resistance.

Key Word : *Watermarking, SWT, QI, QRD, Algoritma Genetic*