

ABSTRACT

Dissemination of digital content is so easy that it provides an important identity. Everyone can change and modify it easily. Watermarking is one way of providing identity without damaging the inserted content. Digital content that has been watermarked requires high resolution to produce clearer and more detailed images. This research provides an alternative to the super resolution technique. The main purpose of super resolution is to produce high resolution images from low resolution images using high pixel density.

The method used in this thesis is the SWT (Stationary Wavelet Transform) method because the host remains intact after insertion. Have a good PSNR quality value, and have a good perception of transparency. and the Centroid method is performed to see the mean value of the image under study. And by using the QIM (Quantization Index Modulation) insertion method. The super resolution method uses bicubic. This interpolation results in finer image enlargement at the edges. Bicubic uses 4×4 neighboring pixels to retrieve information.

The results of this study used MATLAB, and were tested with a 32×32 sample image. As a watermark, and a host with a size of 2048×2048 . And given a Gaussian Noise, Translation, and Rotate attack. From this study the best results are seen using a bicubic with a value of $BER = 0.1201$ on no attacks, $BER = 0.1064$ on Gaussian Noise attacks, $BER = 0.541$ on translational attacks, $BER = 0.4814$ on rotate attacks. And also other parameters PSNR, as well as SSIM.