ABSTRACT

Denoising is a technique, which purposed for decreasing the effect of noise distortion on acquisition result. In this final assignment, the acquisition result is multi layer data like stereo voice and RGB image.

Reparation of damage on multi layer data becomes very important because the limit of acquisition tool these day. Environments and acquisition tool which not ideal makes additive distortion of noise on digital data like RGB image and stereo voice, because of that, an algorithm needed to repair the damage on acquisition.

In this final assignment, normal shrink algorithm implemented to get threshold value that needed in soft threshold process of all sub bands except low pass residual sub band in every level decompositions. Twenty-five time of level decomposition are implemented to knowing the effect of which is upper, lower, and on maximum decomposition level. Symlet first until 20th orders used in this final assignment.

Bitmap (*.bmp) and (*.wav) are used to be image and voice sample in this final assignment. Those image and voice distorted by additive white gaussian noise with 10 until 20 dB SNR. Base from the experiment, it can be concluded that the specific order and decomposition level of wavelet on normal shrink algorithm can repair until 12 dB of PSNR on 10 dB SNR noised image. On the other hand, normal shrink algorithm can increase until 5.2 dB SNR from 10 dB SNR noised voice.

Key words: *Soft threshold, Normal Shrink, AWGN, Wavelet*