ABSTRACT

Noise is happening everywhere especially in electronic voice communication. This project is about noise filtering system which called 'denoising sound signals using wavelets'. The project is a software base and use MATLAB as a tool to develop and demonstrates the noise filtering system in corrupted sound.

The design of filtering systems is done suing wavelets. In order to do that, the data representation of wavelets must be written and prepared in the form of coefficient. By few manipulations of coefficients on the wavelets towards corrupted signal, clean sound signal can be obtained at the output. Using wavelets methods in de-noising is an important aspect in application of wavelets of wavelet analysis. The key technology here is uses the wavelet transform method to de-noise a signal through a technique called thresholding. It confirms the reliability of the theory through the wavelet threshold de-noising principle, use of four types of thresholds wavelets systems are implemented, one is sqtwolog, second is minimaxi, third is heursure and last one is rigrsure.

Difference of signal to noise ratio can be obtained and calculated before and after filtering system. In the end of the project, difference signal to noise ratio can be plotted through GUI of MATLAB. User then can determine the quality of filtering system from the graphs plotted.