

Abstract

Noise reduction process can improve the quality of digital sound signal. Noise reduction has not been implemented in the applications that use speech recognition. Thus, the accuracy of application will be less than the maximum.

In this final assignment, conducted research on the types of noise, noise prediction in a digital audio signal, noise reduction, and implement application based on Android Iyoo. Noise that can interfere with the translation of speech process is the high frequency noise. Whereas noise whose frequency is lower than the user's voice is not usefull for calculation, because the signal will be dominated by the noise from the user and the noise does not have a large impact on the accuracy of the sound translation process.

Designed system is also able to predict the incoming noise signal. If there is noise in the speech signal, the signal will be sent to the noise reduction process. But if the input sound is really clean, the sound signal is not sent to the noise reduction process. This is done because the original sound could have been damaged when entered into the noise reduction process where there is no noise in it.

The method used in the noise reduction process is Discrete Wavelet Transform. The Discrete Wavelet Transform read the sound signals based on frequency and time domain. Therefore, Discrete Wavelet Transform is very suitable to handle this noise reduction process.

Keyword: noise, noise reduction, digital sound signal, Discrete Wavelet Transform