

Abstract

Noise is unwanted signals that are naturally present in all types of systems. Noise can be random noise or white noise with or without coherent noise caused by the mechanism or the recording media processing algorithms. In the electronic recording devices, a major form of noise is hiss caused by random electrons that, heavily influenced by heat, stray from their designated path. These stray electrons influence the voltage of the output signal and thus create detectable noise. Noise that may occur in the audio system is the acoustic noise, audio noise and electrical noise.

In speech recognition, noise can be classified into two types, namely additive noise and convolutional noise. Additive noise is noise resulting from the additional noise in the background speakers, while the convolutional noise is the noise that arises due to the distortion channel on the media. One method that can be used to reduce noise is spectral subtraction method. Spectral subtraction using spectral degrees of sound to estimate the noise and its noise signal. Most of the spectral subtraction method using a voice activity detector (VAD) to determine when that voice is the voice that was quiet (silent), to obtain accurate estimates noise. As performance measure using SNR (*signal-to-noise ratio*), energy and MOS (*mean opinion score*).

Keywords: noise, noise reduction, spectral subtraction, VAD, SNR, MOS.