

Thesis Title	Noise Estimation for Low Distortion Speech Enhancement in Real Environment
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Abstract

In the speech recognition system, recognition rate is decreased when the noise signal is mixed to the clean signal. So the speech enhancement system is proposed for decreasing the noise signal in the noisy signal (noise mixes to clean signal). Moreover, in various environments, there are various noise signals that affect the distortion of the enhance signal and recognition rate. This thesis proposes noise estimation for low distortion speech enhancement in real environment. In most speeches, there exist parts of speeches containing no voice signals, hence only the noise signal exists in that part. Such neighborhood noises of the voiced signal are used to estimate noise in the voiced signal. Then the estimated noise is subtracted from the voiced signal (noisy signal). The experiment consist of two parts. The first part is the experiment for comparing the minimum mean square error (MMSE) of the proposed method to the MMSE of the conventional method, whereas the proposed method has 76.64 percent improvement comparing with the conventional method. The second one is for comparing the recognition rate of the proposed method to the conventional method, whereas the recognition rate is improved from 64.6 percent to 81.2 percent.