Abstract

Speech coding has become one of the most essential techniques in telecommunications and in the multimedia infrastructure. Existing speech coding techniques are applicable only for stationary environment and degrade the speech quality. This paper proposes a novel speech coding technique with better speech quality through MCRA and modified MAP. Maximum A Posteriori (MAP) criterion is extensively utilized in the statistical model-based Minima Controlled Recursive Averaging (MCRA) approaches. In the traditional MAP criterion, the inter-frame correlation of the voice activity is not taken into account. A novel technique to enhance the MCRA depending on the modified MAP via two-state Hidden Markov Model (HMM) is presented in this paper. With the proposed MAP criterion, the decision rule is obtained by clearly integrating the a priori, a posteriori, and inter-frame correlation information into the Likelihood Ratio Test (LRT).

References

Efficient Speech Enhancement Approach based on Minima Controlled Recursive Averaging through Modified Map Criterion using Hidden Markov Model


- V. Stouten, H. V. hamme, and P. Wambacq, &quot;Application of minimum statistics and minima controlled recursive averaging methods to estimate a cepstral noise model for robust ASR,&quot; in Proc. ICASSP, Toulouse, France, May 2006, pp. 765–768.
- N. Fan, J. Rosca, and R. Balan, &quot;Speech noise estimation using enhanced minima controlled recursive averaging,&quot; in Proc. ICASSP, Honolulu, HI, Apr. 2007, pp. 581–584.
- Zavarehei, E.; Vaseghi, S.; Qin Yan, &quot;Noisy Speech Enhancement Using


Index Terms

Computer Science

Keywords

Minima Controlled Recursive Averaging (mcra)  Hidden Markov Model (hmm)
Maximum A Posteriori