Adaptive Noise Cancellation for speech Employing Fuzzy and Neural Network

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Abstract

Adaptive filtering constitutes one of the core technologies in digital signal processing and finds numerous application areas in science as well as in industry. Adaptive filtering techniques are used in a wide range of applications such as noise cancellation. Noise cancellation is a common occurrence in today telecommunication systems. The LMS algorithm which is one of the most efficient criteria for determining the values of the adaptive noise cancellation coefficients are very important in communication systems, but the LMS adaptive noise cancellation suffers response degrades and slow convergence rate under low Signal-to-Noise ratio (SNR) condition. This paper presents an adaptive noise canceller algorithm based fuzzy and neural network. The major advantage of the proposed system is its ease of implementation and fast convergence. The proposed algorithm is applied to noise canceling problem of long distance communication channel. The simulation results showed that the proposed model is effectiveness.