

Abstract

Communication is very important for the relationship between humans, but the *noise* is an obstacle in the process of achieving this communication. To overcome this problem, we need a process of *noise* reduction that serves to produce human speech signal, which is free from *noise* so as to improve the performance of voice processing. The implementation of *noise* reduction can be performed by various methods one of them is using Adaptive *Noise* Cancellation.

Adaptive *noise* cancellation (ANC) is a way to reduce/eliminate *noise* by generating a signal that will reduce or eliminate such *noise*. The process of the ANC in this thesis applies the concept of fuzzy logic which inference system is organized into an adaptive neural network that is using the Adaptive Neuro-Fuzzy Inference System (ANFIS).

From the simulation test results are built using MATLAB 2009a, ANFIS is able to reduce noise in human speech signals with different noise strengths and with different sampling frequencies. The success of ANFIS is shown by the reduced noise in the signal output that can be seen from the value of Mean Square Error (MSE) are getting smaller and the value of Signal to Noise Ratio (SNR) increases.

Keywords: ANFIS, ANC, noise reduction