

Recognition of Noisy Words Using the Time Delay Neural Networks Approach

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Abstract : This paper presents a recognition system for isolated words like robot commands. It's carried out by Time Delay Neural Networks; TDNN. To teleoperate a robot for specific tasks as turn, close, etc... In industrial environment and taking into account the noise coming from the machine. The choice of TDNN is based on its generalization in terms of accuracy, in more it acts as a filter that allows the passage of certain desirable frequency characteristics of speech; the goal is to determine the parameters of this filter for making an adaptable system to the variability of speech signal and to noise especially, for this the back propagation technique was used in learning phase. The approach was applied on commands pronounced in two languages separately: The French and Arabic. The results for two test bases of 300 spoken words for each one are 87%, 97.6% in neutral environment and 77.67%, 92.67% when the white Gaussian noisy was added with a SNR of 35 dB.

Keywords : TDNN, neural networks, noise, speech recognition

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