Speaker Recognition Using LIRA Neural Networks

Authors : Nestor A. Garcia Fragoso, Tetyana Baydyk, Ernst Kussul

Abstract : This article contains information from our investigation in the field of voice recognition. For this purpose, we created a voice database that contains different phrases in two languages, English and Spanish, for men and women. As a classifier, the LIRA (Limited Receptive Area) grayscale neural classifier was selected. The LIRA grayscale neural classifier was developed for image recognition tasks and demonstrated good results. Therefore, we decided to develop a recognition system using this classifier for voice recognition. From a specific set of speakers, we can recognize the speaker's voice. For this purpose, the system uses spectrograms of the voice signals as input to the system, extracts the characteristics and identifies the speaker. The results are described and analyzed in this article. The classifier can be used for speaker identification in security system or smart buildings for different types of intelligent devices.