

USER AUTHENTICATION VIA SPEAKER IDENTIFICATION

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ABSTRACT

Speech is the primary mode of the communication among humans, and Voice modalities seem to be the most convenient for the users in such authentication system. Therefore the concept of automatic speaks identification is developed rapidly in last few decades.

The automatic speaker recognition technologies have become more important and speech aided applications are using many for many researches. The main challenge for automatic speaker recognition is to deal with the variability of the environments and channels from where the speech is obtained.

This research presents speaker recognitions system that was been developed by using artificial neural network. It consist of three main modules namely LPC module, neural network module and final GUI module. The final user identification module presented the output generated by the other modules. When considering the module one and module two, module two recognition speaker using Back propagation Neural Networks (BNN) in which input signals are out coming from a Linear Predictive Coding (LPC) processing method (module one)that characterizes each voice signal. However, these three modules operate separately.

One of the important specialty of this system is all three modules are developed using MATLAB programming language. Even for\the user interfaces this used MATLAB. The reason is I need to prove that when developing an ANN project it should not depend the UI developing with another programming language.

The speaker identification accuracy is around 85% for the current developed system. Still this system has limitations .The number of users that can use this system is still limited. The user can add new users to the system by using all three modules in order. The range of accept and reject is defined by using the simulation results of the neural network. If the numbers of users are increase, the similarity will be increase, and cause limitation of this system.

There are number of suggestions to further development of this speaker identification system. Nevertheless, all the objectives in research it had been achieved within this product.