

Digital Signal Processing Lab

Project Abstract

Project Title: Identification of gender using voice signals

An automatic gender detection may be useful in some cases of a mobile healthcare system. For example, there are some pathologies, such as vocal fold cyst, which mainly occur in female patients. If there is an automatic method for gender detection embedded into the system, it is easy for a healthcare professional to assess and prescribe appropriate medication to the patient. In human voice production system, contribution of the vocal folds is very vital. The length of the vocal folds is gender dependent; a male speaker has longer vocal folds than a female speaker. Due to longer vocal folds, the voice of a male becomes heavy and, therefore, contains more voice intensity.

In a mobile healthcare system, automatic gender detection can play a significant role. There are some vocal folds pathologies, which are biased to a particular gender; for example, vocal folds cyst can be seen particularly in female patients. If there is a mechanism to automatically detect the gender of the patient, it is easier for a care giver or a healthcare professional to prescribe the appropriate treatment. In this system, the voice or speech of the patient is recorded via a smart device, which is connected to the Internet. The voice or speech is then transmitted to a cloud, where a cloud manager authenticates the patient. The manager distributes the task of feature extraction and classification to various servers, where a decision of gender is made. The decision along with medical data is transmitted to registered healthcare professionals for proper treatment.

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