Feature Extraction from Children's Speech for Gender Classification

Khin Aye Chan [1], Su Su Maung [1*], Khine Thin Zar [2]

[1, 1*, 2] Department of Computer Engineering and Information Technology

[1, 1*, 2] Yangon Technological University, Yangon, Myanmar

[1] khinayechanchan@gmail.com, [1*]susuela@gmail.com, [2] ngengeko@gmail.com

Abstract

Today classification of gender is one of the most important procedures in speech processing. A successful gender classification approach can boost the performance of many different applications as well as face recognition, smart human-computer interface and computer-aided physiological or psychological analysis. Gender identification task from children's speech is a challenging problem as there's no significant difference in the acoustic properties of male and female children. This paper is about investigation on the efficient features to discriminate the gender from children's speech. The Mel Frequency Cepstral Coefficient (MFCC) method is used for extracting features from speech signals. This is one of the most popular feature extraction techniques used in speech recognition. Voice samples for feature dataset are collected from children of age range 6 to 11 years, both male and female. In present system ACID pro voices editing software is used at the stage of preprocessing audio files and then first 12 MFCCs are extracted from the preprocessed signal. Features are evaluated using a nonlinear classifier namely Random Forest (RF) for gender classification from children speech. Experimental result represents that proposed system of using MFCC for gender prediction have good accuracy.

Keywords: Gender Classification, Feature Extraction, Speech Recognition, MFCC, RF