Stameering Speech Signal Segmentation and Classification using Machine Learning

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Abstract: *Stuttering or Stammering is a speech defect within which sounds, syllables, or words are rehashed or delayed, disrupting the traditional flow of speech. Stuttering can make it hard to speak with other individuals, which regularly have an effect on an individual's quality of life. Automatic Speech Recognition (ASR) system is a technology that converts audio speech signal into corresponding text. Presently ASR systems play a major role in controlling or providing inputs to the various applications. Such an ASR system and Machine Translation Application suffers a lot due to stuttering (speech dysfluency). Dysfluencies will affect the phrase consciousness accuracy of an ASR, with the aid of increasing word addition, substitution and dismissal rates. In this work we focused on detecting and removing the prolongation, silent pauses and repetition to generate proper text sequence for the given stuttered speech signal. The stuttered speech recognition consists of two stages namely classification using ANN and testing in ASR. The major phases of classification system are Re-sampling, Segmentation, Pre Emphasis, Epoch Extraction and Classification. The current work is carried out in UCLASS Stuttering dataset using MATLAB with 4% to 6% increase in accuracy by ANN.*

Keywords: Stuttering, Stammering