Abstract

This paper provides an analysis of phrase and word boundary detection in a background of noise, which occurs in the context of Automatic Recognition System (ASR) and Text-To-Speech (TTS) synthesis systems for Indian languages. ASR and TTS are the major components in Speech To Speech Translation (STST) system. Both are always need a speech signal to be segmented into some basic units like phrases, words, phonemes and syllables. Normal speech is a continuous sequence of sounds with no specific pause to indicate word boundaries. Hence to convert speech into corresponding text, it is necessary to identify the boundaries and phrases present in the continuous speech signal. In this work a robust algorithm for automatic continuous speech segmentation for Indian languages using short time energy and zero crossing rates has been proposed. This proposed method has been tested on various speakers’ speech in four different Indian languages such as Tamil, Telugu, Hindi and Malayalam. The results shown to be computationally efficient for real time applications and it performs better than conventional methods for speech samples collected from noisy as well as noise free environment.
Robust Automatic Continuous Speech Segmentation for Indian Languages to Improve Speech to Speech Translation


Index Terms

Computer Science

Signal Processing

Keywords

Automatic Segmentation  Indian languages  Short Time Energy  Zero Crossing Rate