ABSTRACT

Recently, the usage of audio applications are needed in media application that use differentiation of audio data, like content-based coding and audio compression, equalization between speech and music automatically. So an efficient algorithm to segment audio signal into speech signal or music signal separately is needed.

In this final project, segmentation and classification processes using an algorithm based on Decision Tree are applied. In this algorithm, there are two phases of processing, learning phase and clarification phase. The input signal is audio signal from radio streaming recording, while the output signal is part of speech or music.

In the thresholding phase, threshold values for speech/music classification using decision tree-based algorithm are obtained, such that, for speech, threshold Short-time energy $\leq$ -78,5470 dB andmel frequency cepstrum coefficient (MFCC) $\leq$ 7,1835, for music, threshold Short-Time Energy $\geq$ -60,2717 dB andmel frequency cepstrum coefficient (MFCC) $\geq$ 7,6848 and frame segmentation value is 4096 frame and moving average coefficient is 50.

In the classification process phase, 8 audio samples with minimal accuracy is 93.97% and maximal accuracy is 99,99% are used.

Keywords : decision tree algorithm, speech, music, segmentation, and classification