

SPEECH RECOGNITION OF HINDI PHENOMES USING MFCC AND BHATTACHARYYA HISTOGRAM DISTANCE

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ABSTRACT

This paper describes an algorithm that takes advantage of the distance measures for finding similarity between the histogram profiles of the feature matrix made of audio signals (Hindi Phenomes). The results obtained with Swaranjali for tests conducted on a vocabulary of Hindi digits of different speaker. Many researchers have used the root mean square (rms), log spectral distance, cepstral distance, likelihood ratio (minimum residual principle or delta coding (DELCO) algorithm), and a cosh measure (based upon two non symmetrical likelihood ratios), however feature matrix profile based measure was not used, which has distinct advantage when it comes finding similar features for voice profile recognition. Bhattacharyya histogram is used to measure the distance between the histogram profiles of the feature matrix made of audio signals (Hindi Phenomes).

KEYWORDS: MFCC, K-Means Algorithm, Framing, Windowing, Hamming Window, Fast Fourier Transform, Mel-Scaled Filter Bank, Bhattacharyya Coefficient, ROC Curve