

TEXT INDEPENDENT SPEAKER VERIFICATION IN REAL TIME ENVIRONMENT USING MULTIBAND SPECTRAL SUBTRACTION AND GMM ON MOBILE PHONES

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ABSTRACT

In this paper we study the performance of speaker verification system by applying spectral subtraction to multiband speech in real environment. In real world environment noise from different sources could exist and which may interfere with the speech signal at different frequencies. Because of the colored nature of noise which does not spread uniformly over the spectrum of speech i.e. some of the frequencies may be most affected while some frequencies may be least affected, a multiband filter bank approach is proposed. In this approach a filter bank is designed which divides the speech signal into a number of frequency bands. Spectral subtraction is then applied to each of the bands and the result of all the subtraction are combined at the end. Results have shown quite a significant improvement in performance when spectral subtraction is applied to multi band than applied to the entire speech signal.

KEYWORDS: Speaker Verification, Spectral Subtraction, Filter Bank, Gaussian Mixture Model