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RESEARCH ARTICLE

Analysis of Vocoder Technology on Male Voice

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Abstract- This study tries to reproduce a model of the male voice signal using vocoder technology and to demonstrate the various stages involved while processing the voice signal. The techniques employed to accomplish these goals include extracting the fundamental and formant frequencies from the vocal-tract of the speaker with the aid of the matlab tool. Cepstrum and Autocorrelation function techniques were used to determine the fundamental frequency in the frequency and time domains respectively. Linear prediction technique was also used to determine linear coefficients of the filter (vocal tract), the formant frequencies and then applying the autocorrelation function to calculate the equation to determine the reflection coefficients of the filter. These techniques were applied to samples of male voices. The test and results was able to show how to differentiate a voiced from an unvoiced speech; and how the original signal modeled can be reconstructed.

Keywords- cepstrum; linear prediction; spectrogram; vocoder; voice

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