Abstract

Speaker identification is a biometric process. The objective of speaker identification is to extract, characterize and recognize the information about speaker identity. Speaker Recognition technology has recently been used in a vast number of commercial areas successfully such as in voice based biometrics; voice controlled appliances, security control for confidential information, remote access to computers and many more interesting areas. A speaker identification system has two phases which are the training phase and the testing phase. Feature extraction is the first step for each phase in speaker recognition. Many algorithms are used for feature extraction. In this work, the Mel Frequency Cepstrum Coefficient (MFCC) feature has been used for designing a text dependent speaker identification system. In the identification phase, the existing reference templates are compared with the unknown voice input. In this thesis, Hidden Markov Model (HMM) method is used as the training/recognition algorithm which makes the final decision about the specification of the speaker by comparing unknown features to all models in the database and selecting the best matching model. i.e. the highest scored model. The speaker who obtains the highest score is selected as the target speaker.
Text Dependent Speaker Identification using Hidden Markov Model and Mel Frequency Cepstrum Coefficients

References

- Speaker Verification using Vector Quantization and Hidden Markov Model. Mohd Zaizu Ilyas, Member, IEEE, Salina Abdul Samad, Senior Member, IEEE, Aini Hussain, Member, IEEE and Khairul Anuar Ishak, Member, IEEE. "The 5th Student Conference on Research and Development –SCOREd 2007 11-12 December 2007, Malaysia.
- HMM Speaker Identification Using Linear and Non-linear Merging Techniques Unathi Mahola, Fulufhelo V. Nelwamondo, Tshilidzi Marwala School of Electrical and information Engineering University of the Witwatersrand, Johannesburg, South Africa.

Index Terms

Computer Science               Signal Processing
Keywords
Mel Frequency Cepstrum Coefficient (MFCC)  Hidden Markov Model (HMM)
Speaker Identification (SI)

Fast Fourier Transform (FFT).