Abstract

Speaker Recognition is a process by which a machine authenticates the claimed of a person from voice characteristics. A Major application includes biometric identification and security. Speaker recognition consists of the process to convert a speech waveform into features that are useful for further processing. A direct analysis and Synthesizing the complex voice signal is due to too much information contained in the signal. Therefore the digital signal processes such as Feature Extraction and Feature Matching are introduced to represent the voice signal. There are many algorithms and techniques such as Linear Predictive Coding (LPC), Hidden Markov Model (HMM), Artificial Neural Networks (ANN) and etc. Firstly, human voice is converted into digital signal form to produce digital data representing each level of signal at every discrete time step. The digitized speech samples are then processed using MFCC to produce voice features.
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After that, the coefficient of voice features can go through ANN to select the pattern that matches the database and input frame in order to minimize the resulting error between them. This paper presents the speaker recognition system with modification in the Computation Phases of Mel Frequency Cepstral Coefficients (MFCC) during Feature Extraction and Artificial Neural Networks for Feature matching for designing an accurate/Robust Speaker recognition.

References

- Lindasalwa Muda, Mumtaj Begum and I.Elamvazuthi Voice Recognition Algorithms using Mel Frequency Cepstral (MFCC) and Dynamic Time Wrapping(DTW) Technique, university Teknologi PETRONAS, Tronoh, Perak
- Jamal Price, sophomore student, Design an automatic speech recognition system Using Malta, University of Maryland Eastern Shore Princess Anne.
- Douglas A. Reynolds, Member, IEEE, and Richard C. Rose, Member, IEEE, “Robust Text- Independent Speaker Identification Using Gaussian Mixture Speaker Models”, TRANSACTIONS ON SPEECH AND AUDIO PROCESSING, 1995
- Sujit kumar Behera, Jetendra, Speaker verification using Mel frequency cepstral coefficient and artificial neural network, NIT, Rourkela. http://ethesis.nitrkl.ac.in/3745/1/final_yr_project__thesis.pdf
- Speaker Recognition System, minhdo, teaching/speaker recognition, DSP mini Project.
- Zaidi Razak, Noor Jamilah Ibrahim, Emran mohd tami, Mohd Yamani Idna Idris, Mohd yaakob Yusoff, Quranic verse recitation feature extraction using Mel frequency costrel coefficient (MFCC), Universiti Malaya.
- Eko Riyanto, Suryono, Informatics Engineering STMIK HIMSYA, Semarang, Indonesia
- Adjoudj Reda, Boukelil Aoued, Evolutionary Engineering and Distributed Information System Laboratory, EEDIS, Computer Science Department, University of sidi Bel- Abbes, Algeria

Index Terms

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