Abstract

The vowel sounds are perhaps the most interesting class of sound in English. Their importance to the classification and representation of written text is very low; however, most practical speech recognition systems rely heavily on vowel recognition to achieve high performance. In this paper we propose a technique for the vowel classification using Linear Prediction Coefficient with combination of statistical approach and Artificial Neural Network. The proposed technique achieves the 98.7% accuracy rate for vowel classification.

References

- International Phonetic Association, Department of Theoretical and Applied Linguistics, School of English, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece. International Phonetic Alphabet chart, 1996.
- Gopalakrishna Anumanchipalli, Rahul Chitturi, "Development of Indian Language
Speech Databases for Large Vocabulary Speech Recognition Systems:
- Jiehua Dai Zhengzhe Wei, "Study and Implementation of Feature Extraction and Comparison In Voice Recognition".
- Bharti W. Gawali, Santosh Gaikwad, Pravin Yannawar, Suresh C. Mehrotra, "Marathi Isolated Word Recognition System using MFCC and DTW Features", Proc. of Int. Conf. on Advances in Computer Science 2010
- Qi li, frank k. Soong, and olivier siohan, "A High-Performance Auditory Feature For Robust Speech Recognition".
- Transform Dr. H B Kekre1, Vaishali Kulkarni, "Speaker Identification using Row Mean of DCT and Walsh Hadamard"; International Journal on Computer Science and Engineering (IJCSE), ISSN : 0975-3397 Vol. 3 No. 3 Mar-2011
- "Digital Signal Processing"; By-P. Ramesh Babu Scitech Publications (India) PVT, LTD.
- "Fundamental of Speech Recognition"; By-Lawrence Rabiner , Biing-Hwang Juang, Published by Pearson Education (Singapore) Pte. Ltd. Indian Branch.

**Index Terms**

Computer Science  
Artificial Intelligence

**Keywords**

ANN (Artificial Neural Network)  
Discrete Cosine Transform (DCT)  
Fast Fourier
Vowel Classification based on LPC and ANN

Transform (FFT)

Linear Predictor Coefficients (LPC)

Vowel Classification System (VCS)