Automatic Dialect Classification

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 176
Number 3

Year of Publication: 2017

Authors:
Esra J. Harfash, Abdul-kareem A. Hassan

10.5120/ijca2017915554

Abstract

Automatic Dialect classification (ADC) is represented important new part in automatic speech recognition (ASR). In this paper an automatic Dialect classification to independent system for Arabic languages is presented. The speaker of this system are from some Arabic countries: Egyptian, Iraq, Levantine and Kuwait, where each speaker speaks clip from the dialect of his country. The MFCC is adopted here to extract the important features from the speech signal. In the recognition task the Linear discriminant analyses (LDA) and Dynamic time warping (DTW) are used in classification stage. The LDA and DTW methods are efficient tools for the classification problems with many variations in speech signal. During the testing process, the LDA and DTW was given efficient results in identifying the classes dialect speaker, but the success rate her for DTW is somewhat better compared to LDA.

References

1. F. Biadsy, 'Automatic Dialect and Accent Recognition and its Application to Speech
Automatic Arabic Dialect Classification

Recognition', Ph.in the Graduate School of Arts and Sciences ,COLUMBIA UNIVERSITY,[2011].


8. S. Balakrishnama, and A. Ganapathiraju, 'LINEAR DISCRIMINANT ANALYSIS FOR SIGNAL PROCESSING PROBLEMS', Institute for Signal and Information Processing ,Mississippi State University ,[1999].


17. K. Mahkonen, 'Mel-frequency cepstral coefficients (MFCCs), SGN-14006 Audio and Speech Processing, [2013].


21. Sakoe, H. and Chiba, S., 'Dynamic programming algorithm optimization for spoken word


23. Eiji M., 'The Dynamic Time Warping Algorithms', Department of Computer Science, Tsing Hua University, Hsinchu 300 Taiwan ,June 30, [2006]

Index Terms

Computer Science

Artificial Intelligence

Keywords

Dialect recognition ,Automatic Dialect classification ,Automatic speech recognition ,Dialect and accent recognition, Linear discriminant analyses (LDA).