Automatic Birdsong Recognition with MFCC Based Syllable Feature Extraction

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Abstract

In this study, an automatic birdsong recognition system based on syllable features was developed. In this system, after syllable segmentation,
three syllable features, namely mean, QI and QE, were computed from the MFCCs of each syllable aims at capturing variations in time as well as amplitude transitions of the MFCC sequences. With the advantages of the fuzzy
c-mean (FCM) clustering algorithm and the linear discriminant analysis (LDA),
the presented feature vector was used to construct an automatic birdsong recognition system applied to a birdsong database with 420 bird species.

Keyword：MFCC, syllable, linear discriminant analysis, transition matrix