# Automatic Recognition of Animal Vocalizations Using Averaged MFCC and Linear Discriminant Analysis

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## Abstract

In this paper we propose a method that uses the averaged Mel-frequency cepstral coefficients (MFCCs) and linear discriminant analysis (LDA) to automatically identify animals from their sounds. First, each syllable corresponding to a piece of vocalization is segmented. The averaged MFCCs over all frames in a syllable are calculated as the vocalization features. Linear discriminant analysis (LDA), which finds out a transformation matrix that minimizes the within-class distance and maximizes the between-class distance, is utilized to increase the classification accuracy while to reduce the dimensionality of the feature vectors. In our experiment, the average classification accuracy is 97.5% and 98% for 30 kinds of frog calls and 19 kinds of cricket calls, respectively.

Keyword：linear discriminant analysis, Mel-frequency cesptral coefficients