A Robust Environmental Sound Recognition System using Frequency Domain Features

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Abstract

In ubiquitous environments, analysis and classification of sound plays a critical role in various acoustic-based recognition systems. This work aims to contribute towards building an automatic sound recognition system that can understand the surrounding environment by the audio information. In this paper, an acoustic signal based context awareness system is proposed for detecting sound events in five different real-world environment. This approach is based on Back Propagation Neural Network (BPNN) classifier using a new feature set from frequency-domain features. The experiments on various categories illustrate that the results of recognition are significant and effective.

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Index Terms

Computer Science  Pattern Recognition

Keywords

Spectral crest  Spectral decrease  Spectral slope  Spectral skewness  Spectral
Flatness
Back propagation neural network (BPNN).