

数据库、信号与信息处理

利用PCNN神经元点火位置信息的语音特征研究

张歆奕, 阮柏尧

五邑大学 信息学院, 广东 江门 529020

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摘要 语谱图是语音信号的时频表示, 含有丰富的信息。把语谱图输入到脉冲耦合神经网络(PCNN)可以获得语音的特征矢量。传统的语音特征采用PCNN50次迭代的点火次数。提出了一种新的语音特征参数, 该参数基于PCNN神经元点火位置的信息。说话人识别的实验表明, 新语音特征比传统的特征更能反映话者语音信号的特点, 获得更好的识别结果。

关键词 [语谱图](#) [脉冲耦合神经网络](#) [说话人识别](#)

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Speech feature based on position of PCNN neurons fired and its application to speaker recognition

ZHANG Xin-yi, RUAN Bai-yao

School of Information, Wuyi University, Jiangmen, Guangdong 529020, China

Abstract

Spectrogram is a time-frequency representation of speech signal. This image contains rich information of the speech. The traditional speech feature extracted from spectrogram using Pulse Couple Neural Network (PCNN) is the time series of the numbers of neurons fired at each iteration. Usually the length of the series is 50 data points. This paper proposes a new approach to extract speech feature from spectrogram using PCNN, which is based on the distribution of the neurons fired. Experiments on speaker recognition show that the new speech feature yields much better results than the traditional one.

Key words [spectrogram](#) [Pulse Couple Neural Network \(PCNN\)](#) [speaker recognition](#)

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通讯作者 [张歆奕 xyzhang@wyu.cn](mailto:xyzhang@wyu.cn)

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