

# 基于 BP 特征选择的语音情感识别

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**摘 要:** 目前语音情感识别主要面临着的难题在关于语音声学特征与情感之间关系的研究成果缺乏一致性, 同样的特征运用不同的库, 识别结果会相差很大. 使用支持向量机 SVM 作为识别机, 通过 BP 神经网络进行特征选择, 得到 EMO-DB 库特征组合的最高识别率为 85.59%, 得到 CASIA 库特征组合的最高识别率为 74.75%. 本文包含 2 个语音库, 其中一个中文, 一个德文. 通过 BP 神经网络特征选择后, 最优特征子集包含 8 个特征, 将特征子集应用于 EMO-DB 库和 CASIA 库的混库实验的识别率为 72.34%, 并与近三年的文章进行了对比分析, 本文的实验结果处在较高的水平.

**关键词:** 语音情感识别; 特征提取; SVM; 特征子集; BP 特征选择; 混库; 分类矩阵

## Speech emotion recognition based on BP feature selection

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**Abstract:** At present, the main problems faced by speech emotion recognition are the lack of consistency in the research results on the relationship between speech acoustic features and emotions, the same characteristics use different databases, the recognition results will vary greatly. Using support vector machine as the recognition machine, feature selection is performed through BP neural network, and the highest recognition rate of EMO-DB database feature combination is 85.59%, the highest recognition rate of the CASIA database feature combination is 74.75%, which improves the speed of the operation. This paper contains two speech databases, one of which is Chinese and one German. After BP neural network feature selection, the recognition rate of the mixed databases experiment of the EMO-DB databases and the CASIA databases was 72.34%. And compared with the articles of the past three years, the experimental results of this paper are at a relatively high level.

**Key words:** speech emotion recognition; feature extraction; SVM; feature subset; BP feature selection; mixed database; classification matrix

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