

基于类依赖的语音情感特征选择

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摘要: 提出一种基于类依赖的语音情感特征选择模型,该模型可以提高语音情感识别的准确率.应用马尔科夫毯分别为每类情感筛选出具有较高表征能力的特征子集,通过支持向量机用于学习情感分类.为了更好地融合多分类器的分类决策,将支持向量机的二分类转化为概率分类,以解决多分类器联合使用的投票冲突问题.在公开数据集上的实验结果表明,与信息增益、主成分分析以及类独立的特征选择方法相比,此方法可以较大幅度减少样例维数,同时获得较高的情感识别率.

关键词: 语音情感识别;特征选择;类依赖;马尔科夫毯;支持向量机

Speech Emotion Recognition with Class-dependent

Feature Selection Methods

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Abstract: This study proposes a novel class-dependent feature selection model to improve the performance of speech emotion recognition. Particularly, we adopt the markov blanket technique to select discriminative features for each emotion class, and use the support vector machine classifier to build the emotion recognition model. To make better decision in multi-label classification, the binary discriminative output of the support vector machine is transformed to a probability output for solving the voting conflict problem. Extensive experimental results on the a publicly available dataset show that in comparison with information gain, principal component analysis, and class-independent feature selectors, the proposed method significantly reduces the feature dimensionality and obtains better classification accuracy.

Key words: speech emotion recognition; feature selection; class-dependent; Markov blanket; support vector machine

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