

应用

融合边界信息的语音样例快速检索

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摘要:

提出了一种融合音素边界信息的语音样例快速检索方法。该方法首先提取查询样例和测试集的音素后验概率;然后,运用层次凝聚聚类算法将音素后验概率序列分段(即音素边界检测),计算每个分段的平均向量并将其分别组成新查询和新索引,再运用动态时间规整进行语音样例的检索;最后,使用虚拟相关反馈技术对检索结果进行修正。实验结果表明:尽管此方法的检索精度略低于直接运用动态时间规整进行检索的检索精度,但其检索速度大大优于后者,且与其他相关文献提出的方法相比,此方法在检索速度方面也具有明显优势。

关键词: 音素后验概率;层次凝聚聚类;动态时间规整;虚拟相关反馈

Fast Query-by-Example Spoken Term Detection Integrating the Boundary Information

FENG Zhi-Yuan, ZHANG Lian-Hai

Abstract:

This paper presents a method of fast query-by-example spoken term detection (QbE STD) integrating the phoneme boundary Information. According to this method, the phoneme posterior probabilities of query examples and test materials should be extracted firstly. and then phoneme posterior probabilities are segmented into segment sequences using hierarchical agglomerative clustering(HAC) algorithm (phoneme boundary detection), new queries and new indexes can be composed of the expectation vectors of the segment sequences. The dynamic time warping(DTW) procedure is formulated to implement QbE STD. Finally, the detection results can be modified by pseudo relevance feedback (PRF). The experimental results indicate that although the method presented by the paper has a slight reduction of the detection performance as compared with DTW, there is a great advantage over the latter in the detection speed, and compared with the method presented by other paper, the method presented by the paper also has far more superiorities in the detection speed.

Keywords: phoneme posterior probabilities hierarchical agglomerative clustering dynamic time warping pseudo relevance feedback

收稿日期 2012-11-21 修回日期 2013-04-22 网络版发布日期 2013-06-25

DOI:

基金项目:

国家自然科学基金(61175017)资助项目

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