论文

一种适于非特定人语音识别的并行隐马尔可夫模型

陈雁翔[①②], 戴蓓蒨[①], 周曦[①], 刘鸣[①]

[①]中国科学技术大学电子科学与技术系,合肥,230026;[②]合肥工业大学计算机与信息学院,合肥,230009

摘要
为了适合非特定人语音识别，提出了一种由多条并行马尔可夫链组成的并行HMM(Parallel Hidden Markov Model，PHMM)，从而融合了基于分类的语音识别中为各个类别建立的模板，提高了识别性能，各条链之间允许有交叉，使得融合的多模板之间存在状态共享，同时PHMM可以在训练过程中自动完成聚类，且测试语音的输出结果来自所有类别，无需聚类分析和类别判断，这些都减少了存储量和计算量，汉语非特定人孤立数字的识别实验表明，PHMM较之传统CHMM使识别性能及噪声鲁棒性都得到了改善。
关键词　　非特定人语音识别　连续隐马尔可夫模型　并行马尔可夫链
分类号　TP391.42

An Appropriate Parallel HMM for Speaker-Independent Speech Recognition

Chen Yan-xiang[①②], Dai Bei-qian[①],Zhou Xi[①], Liu Ming[①]

[①]Dept of Electron. Sci. & Tech.,Univ. of Sci. & Tech. of China Hefei 230026

China;[②]College of Computer Science & Information Hefei Univ. of Tech.,Hefei 230009 China

Abstract
In this paper Parallel Hidden Markov Model (PHMM) made up of several par-allel Markov chains is proposed to fit in with speaker-independent speech recognition. The performance is improved because of the fusion of different models from classification based speech recognition. By sharing states of fused models, making classification automatically during training and getting result from all classifications, the amount of storage and operation can be decreased. The experiment for speaker-independent recognition of mandarin isolated digit shows that the PHMM improves the recognition performance and noise robustness.
Key words　Speaker-independent speech recognition　Continuous Hidden Markov Model（CHMM）　Parallel Markov chain

DOI：

扩展功能

本文信息
- Supporting info
- PDF(1271KB)
- [HTML全文](0KB)
- 参考文献[PDF]
- 参考文献

服务与反馈
- 把本文推荐给朋友
- 加入我的书架
- 加入引用管理器
- 复制索引
- Email Alert
- 文章反馈
- 浏览反馈信息

相关信息
- 本刊中 包含"非特定人语音识别"的 相关文章

本文作者相关文章
- 陈雁翔
- 戴蓓蒨
- 周曦
- 刘鸣