

控制与决策 » 2015, Vol. 30 » Issue (05): 823-830 DOI: 10.13195/j.kzyjc.2014.0358

论文

最新目录 | 下期目录 | 过刊浏览 | 高级检索

◀ 前一篇 | 后一篇 ▶

## 基于模糊测度和证据理论的模糊聚类集成方法

毕凯, 王晓丹, 邢雅琼

空军工程大学防空反导学院, 西安710051.

## Fuzzy clustering ensemble based on fuzzy measure and DS evidence theory

BI Kai, WANG Xiao-dan, XING Ya-qiong

School of Air and Missile Defense, Air Force Engineering University, Xi'an 710051, China.

摘要

图/表

参考文献(17)

相关文章(5)

全文: [PDF](#) (701 KB) [HTML](#) (1 KB)输出: [BibTeX](#) | [EndNote](#) (RIS)

## 摘要

针对现有集成方法在处理模糊聚类时存在的不足, 提出一种基于证据理论的模糊聚类集成方法. 以各聚类成员作为证据元, 以样本点间的类别关系作为焦点, 通过证据积累构造互相关矩阵. 考虑到模糊聚类对于各样本点的聚类有效性, 提出一种结合点模糊度和模糊贴近度的类别关系表示方法, 并以此作为各证据元的基本概率赋值函数. 最后基于互相关矩阵构造样本点间相似性关系, 并利用谱聚类算法对其聚类. 实验中通过与多种已有聚类集成方法的对比表明, 该方法具有较高的聚类性能.

**关键词**: 模糊聚类集成, 模糊贴近度, 模糊度, D-S 证据理论, 互相关矩阵

## Abstract :

In order to solve the weakness of present ensemble methods for fuzzy clustering, a method of fuzzy clustering ensemble based on Dempster-Shafer(DS) theory is proposed, which takes every cluster member as the evidence, takes the relationship between pair of dates as the event and makes the co-matrix by accumulation of the evidence. Considering the classification effectiveness of each data point, a relationship based on the fuzzy degree and the fuzzy close-degree is proposed, and the new relationship is considered as the basic probability assignment for the evidence. Finally, the spectral clustering algorithm is used to make the final partition by similarity relationship based on the co-association matrix. Experimental results show that the method proposed is better than the current methods for clustering ensemble.

**Key words**: fuzzy clustering ensemble fuzzy close-degree fuzzy degree Dempster-Shafer evidence theory co-association matrix

收稿日期: 2014-03-16 出版日期: 2011-04-07

ZTFLH: TP391

## 基金资助:

国家自然科学基金项目(60975026, 61273275).

通讯作者: 毕凯 E-mail: bk3039633@163.com

作者简介: 毕凯(1985), 男, 博士生, 从事智能信息处理和机器学习的研究; 王晓丹(1966), 女, 教授, 博士生导师, 从事智能信息处理和机器学习等研究.

## 引用本文:

毕凯 王晓丹 邢雅琼. 基于模糊测度和证据理论的模糊聚类集成方法[J]. 控制与决策, 2015, 30(05): 823-830. BI Kai WANG Xiao-dan XING Ya-qiong. Fuzzy clustering ensemble based on fuzzy measure and DS evidence theory. Control and Decision, 2015, 30(05): 823-830.

## 链接本文:

<http://www.kzyjc.net:8080/CN/10.13195/j.kzyjc.2014.0358> 或 <http://www.kzyjc.net:8080/CN/Y2015/V30/I05/823>

## 服务

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ E-mail Alert
- ▶ RSS

## 作者相关文章

- ▶ 毕凯 王晓丹 邢雅琼