

数据库与信息处理

## 一种基于灰色关联度的决策树改进算法

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**摘要** 在构造决策树的过程中,分裂属性选择的标准直接影响分类的效果。分析了现有改进的ID3算法不同程度地存在学习效率偏低和对多值属性重要性的主观评测等问题,提出一种高效而且可靠的基于灰色关联度的决策树改进算法。该算法通过灰色关联分析建立各特征属性与类别属性之间的关系,进而利用灰色关联度来修正取值较多但非重要属性的信息增益。通过实验与其它ID3改进算法进行了比较,验证了改进后的算法是有效的。

**关键词** [决策树](#) [分类](#) [ID3算法](#) [灰色关联度](#)

分类号

## Improved decision tree algorithm based on grey weighted correlated degree

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### Abstract

In the process of constructing a decision tree,the criteria of selecting partitional attributes will influence the efficiency of classification.The paper analyses the shortcoming of current algorithms for improved ID3 which are inefficient to ascertain degree and subjective to measure the attributes which are important or not.Therefore,an efficient and reliable algorithm is proposed by introducing grey weighted correlated degree.The main idea of the approach algorithm is as follows: firstly through grey relational analysis,the relation model of character attributes and classification of the data mining problem is established,then using grey weighted correlated degree to modify information gain of attributes which has many values but not important.Compared with other improved ID3 by an example,the experiment has proved that the improved ID3 algorithm based on grey relational degree is efficient.

**Key words** [decision tree](#) [classification](#) [ID3 algorithm](#) [grey weighted correlated degree](#)

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