

工程与应用

ES-ID3算法及其在中医辨证中的应用

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摘要 提出了一种具备自训练学习能力的ES-ID3决策树算法。该算法克服了传统ID3算法要求所有训练样本必须事先进行分类处理的约束, 通过充分利用已采集但未进行分类的“准训练样本”进行自训练学习过程, 非常适用于获取训练样本代价较高的环境, 如医学病例样本采集等。对肝病中医辨证问题应用该算法, 实验证明, 无论从分类的准确性及对关键决策属性的提取能力, 较之于传统ID3算法, 该算法均有显著提高; 算法结论能对医疗工作提供有效帮助。

关键词 [决策树算法](#) [ID3算法](#) [自训练学习](#) [中医辨证](#)

分类号

ES-ID3 algorithm and its application to diagnosis of traditional Chinese medicine

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Abstract

In this paper, an enhanced ID3 decision tree algorithm called ES-ID3 with self-training-and-learning ability is proposed. The algorithm improves the restriction of the original ID3 algorithm that requires the entire training-set to be classified in advance. By fully processing the “pre-training-set” which has been collected but not yet classified, the algorithm gains itself a self-training-and-learning ability. It is especially suitable in a high cost environment, such as clinical case sampling. This paper focuses on applying the enhanced algorithm to liver diagnosis of traditional Chinese medicine. The experiment results show that compared with the original algorithm, the enhanced one is more accurate and extracts more refined decision attributes, which remarkably contributes to clinical analysis.

Key words [decision tree](#) [ID3](#) [self-training-and-learning](#) [diagnosis of traditional Chinese medicine](#)

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