

基于决策理论粗糙集的一种新属性约简方法

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摘 要: 决策理论粗糙集是一种对噪声数据具有很好容忍效果的粗糙集模型, 然而由于该模型正区域的非单调性, 因此传统的属性约简无法直接构造. 本文将在决策理论粗糙集模型中提出一种新的属性约简方法, 首先给出属性约简一种新的定义, 即属性约简的正区域必须不小于属性全集的正区域, 然后根据这一定义提出了相应的属性约简算法, 最后进行一系列的仿真实验, 通过属性约简的大小、属性约简集的分类精度以及算法效率三个方法证明了该算法的有效性和优越性.

关键词: 决策理论粗糙集; 属性约简; 正区域; 分类性能

A new attribute reduction method based on

decision-theoretic rough set

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Abstract: Decision-theoretic rough set is a rough set model with good tolerance to noise data. However, due to the non monotonicity of the positive region, the traditional attribute reduction can not be directly constructed. In this paper, we propose a new attribute reduction method in decision-theoretic rough set. Firstly, a new definition of attribute reduction is given, that is, the positive region of attribute reduction must not be less than the positive region of the complete set of attributes, and then a corresponding reduction algorithm is proposed based on this definition. Finally, a series of simulation experiments are carried out to prove the effectiveness and superiority of the algorithm by three methods, the size of attribute reduction, the classification accuracy of attribute reduction set and the efficiency of algorithm.

Key words: decision-theoretic rough set; attribute reduction; positive region; classification performance

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