# 基于最小化邻域互信息的邻域熵属性约简算法

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摘　要： 属性约简是粗糙集理论的重要研究内容，混合型信息系统下的属性约简是目前的主要研究方向.在邻域粗糙集模型中，基于邻域熵的方法在进行属性约简时，由于未考虑属性之间的独立性，本文通过融入邻域互信息熵提出一种改进的属性约简算法.文中首先在邻域熵的基础上，提出了混合型信息系统下的邻域互信息熵，然后通过理论分析表明了邻域互信息熵可以作为属性之间独立性的评估，最后将邻域互信息熵融入传统的邻域熵属性约简中，提出一种基于最小化邻域互信息的邻域熵属性约简算法.仿真实验结果表明，该算法可以进一步地提高属性约简结果中属性的独立程度，比相关的属性约简算法具有更高的约简性能.
关键词： 粗糙集；属性约简；混合型信息系统；邻域熵；邻域互信息熵

# Neighborhood entropy attribute reduction based on minimizing neighborhood mutual information

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Abstract： Attribute reduction is an important research content of rough set theory. Attribute reduction in hybrid information system is the main research direction at present. In the neighborhood rough set model, an improved attribute reduction algorithm based on neighborhood entropy is proposed by incorporating neighborhood mutual information entropy, because the independence between attributes is not considered. Firstly, based on the neighborhood entropy, the neighborhood mutual information entropy in hybrid information system is proposed. Then the theoretical analysis shows that the neighborhood mutual information entropy can be used to evaluate the independence of attributes. Finally, the neighborhood mutual information entropy is integrated into the traditional neighborhood entropy attribute reduction, and a neighborhood entropy attribute reduction algorithm based on minimizing neighborhood mutual information is proposed.The simulation results show that the algorithm can further improve the degree of independence of attributes in attribute reduction results, and has higher reduction performance than the related attribute reduction algorithms.
Key words： rough set; attribute reduction; hybrid information system; neighborhood entropy; neighborhood mutual information entropy

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