

论文

基于BIRCH的木材缺陷识别

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摘要:

提出了一种新的基于分层的平衡迭代归约及聚类(balance iterative reducing and clustering using hierarchies, BIRCH)算法的木材缺陷识别方法, 讨论了关于分支因子(B, L)、阈值T的选取及非缺陷类判别问题。该方法通过在一定阈值内构建CF树, 产生初始聚类, 对初始聚类进行非缺陷类判别, 自动识别木材缺陷类及位置并标记。实验结果表明, 该算法能有效地进行木材缺陷识别, 平均识别查准率约为86.3%, 平均识别查全率约为90.1%。

关键词: 分层的平衡迭代归约及聚类 聚类分析 木材缺陷

Wood defect recognition based on BIRCH cluster algorithm

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Abstract:

A new method for wood defect recognition based on BIRCH algorithm is been proposed. The problems about branch factor (B, L)、the selection of threshold T and the discrimination of non-defect class are been discussed. To produce the initial clustering, distinguish non-defect class for the initial clustering, automatically identify the location of the wood's defects and mark it, a CF tree within a certain threshold is been built. The experimental results show that this algorithm can identify the wood's defects efficiently, the average defecting precision ratio is about 86.3%, and the average defecting recall ratio is about 90.1%.

Keywords: BIRCH clustering method wood defect

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