

A New Method to Construct Decision Trees from Training Instances for Handling Classification Problems

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Abstract

In this paper, we present a multi-strategy learning method to construct decision trees from training instances. The constructed decision trees can be much smaller than the ones constructed by the ID3 algorithm. With the help of instance-based learning techniques, the classification accuracy rate of the constructed decision tree is almost the same as the one of the decision trees constructed by the ID3 algorithm. Experimental results show that the proposed multi-strategy learning method is better than the ID3 algorithm when noise or coincidental regularities exist in the training instances from the viewpoint of the number of nodes and the classification accuracy rate of the constructed decision trees.

Keywords: Multi-Strategy Learning, ID3 Algorithm, Decision Trees, Instance-Based Learning.