

Vearapon Hanchodchung 2006: Improving Associative Classification Technique by Using Multiple Essential Class-Association Rules. Master of Engineering (Computer Engineering), Major Field: Computer Engineering, Department of Computer Engineering. Thesis Advisor: Assistant Professor Kitsana Waiyamai, Ph.D. 67 pages. ISBN 974-16-2186-8

Associative classification is a data mining technique that integrates classification with association rule mining. Associative classification can produce more efficient and accurate classifiers than traditional classification techniques. Moreover, generated classifiers in the form of class-association rules (CARs) are more comprehensive than statistical classifiers. A few accurate and effective classifiers based on associative classification have been presented recently, such as CBA, CMAR and CPAR. With the focus on classifier phase, these algorithms generate very large and complex rule sets during the rule generator phase. Despite strategies for sorting and pruning unuseful rules, large number of redundant rules still exists.

The objective of this research is to propose pruning methods for minimizing and reducing number of class-association rules, and sorting strategies for improving accuracy of the output classifier. We propose a new algorithm, CBEAR (Classification Based on Essential Class-Association Rules) for associative classification. Instead of using a complete rule sets, CBEAR uses only ECAR (Essential Class-Association Rules) for building prediction model. At the classifier phase, CBEAR considers only maximal frequent itemsets for sorting and selecting rules. To compare its accuracy with C4.5, CBA, and CMAR, we use standard datasets from UCI machine learning database repository. Experimental results show that CBEAR yields better classification accuracy compared with other associative classification techniques.

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