Phoonperm Suwannarattaphoom 2012: An Approach for Improving Associative Classification in Imbalanced Datasets. Master of Engineering (Computer Engineering), Major Field: Computer Engineering, Department of Computer Engineering. Thesis Advisor: Associate Professor Kitsana Waiyamai, Ph.D. 85 pages.

Associative classification is one of rule-based classifiers that has been applied in many real-world applications. One advantage of the associative classifier is its easy interpretability in terms of classification rules. However, there is room for improvement when associative classification is applied in the imbalanced classification task. In many applications such as medical diagnosis, the minority class can be the class of primary interest and it has a much higher misclassification cost than the majority class. Existing associative classification algorithms can be limited in their performance on highly imbalanced datasets in which the class of interest is a minority class. In this paper we present an approach, SSCR for improving associative classification in imbalanced data sets. SSCR combines statistically significant association rules with cost-sensitive learning to build as associative classifier. Experimental results show that SSCR archives best performance on real-world imbalanced datasets, compared with CBA and C4.5.

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