

Chapter 7 ¹

TRANSFORMATION OF RATIONAL DATA AND SET DATA TO LOGIC DATA

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Abstract: Frequently one wants to extend the use of a classification method that in principle requires records with *True/False* values, such as decision trees and logic formula constructors, so that records can be processed that contain rational number and/or nominal values. A nominal value is an element or subset of a given finite set. In such cases, the rational numbers or nominal values must first be transformed to *True/False* values before the method may be applied. This chapter describes methods for the transformation. For nominal entries, the transformation depends on the size of the given finite set and on whether elements or subsets of that set occur. In particular, the scheme for subsets first transforms the entries to rational data. The transformation of rational numbers to *True/False* values uses a technique called Cutpoint that determines abrupt changes of classification cases. The methods of this chapter are rather new and have been found to be effective and reliable in preliminary tests.

Keywords: Data Transformation, Rational/Set/Logic Data, Cut Detection, Learning Logic Formulas, Data Classification.

¹ Triantaphillou, E. and G. Felici (Eds.), **Data Mining and Knowledge Discovery Approaches based on Rule Induction Techniques**, Massive Computing Series, Springer, Heidelberg, Germany, pp. 253-278, 2006.