

Comparing Performance of ELL and Ganter algorithm for Generating Concept Lattices

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Abstract. Standard Galois Lattices are effective tools for data analysis and knowledge discovery. Many research works in classification or association rules increase the interest of them for data mining. They allow structuring data sets, by extracting concepts and rules to deduce concepts from other concepts. They concern binary data arrays, called *contexts*. Several algorithms were proposed to generate concepts or concept lattices on a data context, for example: Bordat (Bordat, 1986), Ganter (NextClosure algorithm) (Ganter, 1984), Chein (Chein, 1969), Norris (Norris, 1978), Godin (Godin et al., 1995) and Nourine (Nourine and Raynaud, 1999), etc. However the mining of very large database still needs more efficient algorithm. And today we need to treat contexts which are large and not necessarily binary. So we propose a new and fast Galois lattice-building algorithm, called ELL algorithm, will be proposed for generating closed item sets from objects having very general descriptions. A comparison of performance between the Ganter algorithm and ELL will be presented. We propose a way to parallelise large contexts of general lattices since we need to treat huge contexts.

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