Towards Cross-Fertilization between Data Mining and Constraints

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Abstract. In this talk, we overview our contributions to data mining and more gener-
ally to the cross-fertilization between data mining, constraint programming and propo-
sitional satisfiability. We will focus on three contributions. First, we show how propo-
sitional satisfiability (SAT) can be used to model and solve problems in data mining.
As an illustration, we present a SAT-based declarative approach for itemset, associ-
ation rules and sequences mining. Then, we present an original use of data mining
techniques to compress Boolean formulas. Finally, we discuss how symmetries widely
investigated in Constraint Programming (CP) and Propositional Satisfiability (SAT)
can be extended to deal with data mining problems.