A MaxSAT-Based Approach to the Team Composition Problem in a Classroom

Abstract. Given a classroom containing a fixed number of students and a fixed number of tables that can be of different sizes, as well as a list of preferred classmates to sit with for each student, the team composition problem in a classroom (TCPC) is the problem of finding an assignment of students to tables in such a way that preferences are maximally-satisfied. In this paper, we formally define the TCPC, prove that it is NP-hard and define a MaxSAT model of the problem. Moreover, we report on the results of an empirical investigation that show that solving the TCPC with MaxSAT solvers is a promising approach.

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