

AI Techniques for Timetabling and Scheduling Problems

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Abstract

In this talk, we will first provide an overview of various AI-based methods proposed by our lab for solving problems in application domains such as employee timetabling and project scheduling. The topics covered will include solver-independent modelling, constraint programming, and hybrid techniques. In the second part of the talk, we will discuss methods that utilize machine learning techniques for automatic algorithm selection and heuristic algorithm design. We will also briefly present innovative decision support systems that incorporate our solution methods and an approach for preference explanation to guide decision-makers toward solutions that align with their expectations. The talk will conclude with a discussion of future challenges in the domain of scheduling and timetabling.