

Automated Reasoning and Data Analytics for Declarative Process Mining

(Abstract)

Keynote speaker:

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A process describes the temporal evolution of a system. Capturing the rules that govern its control flow helps to understand the boundaries of its behaviour. With a declarative specification, a process is defined by those boundaries, expressed in terms of constraints rooted in temporal logic. The execution dynamics can vary as long as they do not violate such constraints, which specify the conditions that require or forbid the execution of actions. Manually providing a complete list of rules that depict process behaviour consistently, correctly, and precisely is a strenuous task. Process mining can offer valuable help to this end by resorting to the analysis of process data. This talk revolves around the recent advancements in research concerning the discovery of, and reasoning on, the declarative specifications of processes. The discourse will specifically focus on core tasks pertaining to the data-based extraction and verification of rules from a process management and mining perspective, with remarks on open challenges and future research avenues in the field.