

# Mixing automated temporal planning and ML: the role of opaque entities and RL-based guidance synthesis (Invited Talk)

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## Abstract

The integration of planning and Machine Learning (ML) is nowadays a very hot research topic, with significant efforts directed toward learning heuristics or even planning models from example data such as plans and execution traces. In this talk, I will report on my experience in two relatively underexplored approaches to integrating temporal planning and ML. First, I will present how the use of simulated entities within the planning model allows the representation of learned constraints and behaviors: this feature emerged from a need in our development of a new digital twin service in the space domain, and is being integrated in the Unified Planning framework. Second, I will discuss our experimental application of Reinforcement Learning (RL) for the automated synthesis of guidance, enhancing automated temporal planning beyond the traditional focus on heuristic learning.

