

## **Automated Planning**

Automated planning is a branch of Artificial intelligence aimed at obtaining plans (i.e. sequences of actions) for solving complex problems or for governing the behavior of intelligent agents, autonomous robots or unmanned vehicles.

Planning techniques have been successfully applied in different domains, including industrial contexts, logistics, computer games, robotics or space exploration. In this seminar we will review the existing approaches for solving classical planning problems, such as state-space search, plan-space search, graph-based techniques or turning classical planning problems into propositional satisfiability problems.

The course will then focus on the study of knowledge-based planning methods, such as control rule-based pruning or hierarchical task network-based planning techniques. These approaches exploit the domain knowledge provided by human experts to improve the performance of the planning algorithms. Finally, we will briefly introduce advanced planning algorithms, which are able to generate planning policies that take into account time constraints and/or partial observability conditions, which are common in real world applications.