Historical Development on AI Planning

STRIPS(Stanford Research Institute Problem Solver)

STRIPS is the first major planning system that shows the interaction among state-space search, theorem proving, and control theory(Fikes and Nilsson, 1971).

The model tries to get a sequence of operators in a space of world models and transforms the initial world model into a model where the goal state exists. It attempts to model the world as a set of first-order predicate formulas and is designed to work with models consisting of a large number of formulas(Ryan Shrott, 2017).

ADL(Action Description Language)

As an advancement of STRIPS, ADL is an automated planning and scheduling system in particular for robots(Edwin Pednault,1987).

Contrary to STRIPS, the principle of the open world applies with ADL. In STRIPS, everything not occurring in the conditions is being assumed false, but in ADL they are assumed to be unknown. Beside, STRIPS only accepts positive literals and conjunctions. However, ADL allows negative literals and disjunctions as well.

PDDL(Problem Domain Description Language)

Inspired by STRIPS and ADL, PDDL is an attempt to standardize Artificial Intelligence (AI) planning languages(Drew McDermott ,1998).

PDDL is the standard modeling language for the International Planning Competition and was the first modeling language that are used commonly for solving planning problems(Peter Norvig,2010).

Reference

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