2017

Historical Developments in AI Planning and Search – Research Review

ARTIFICIAL INTELLIGENCE NANODEGREE, UDACITY

WALEED ALZOGHBY

waleed.alzoghby@outlook.com

STRIPS – Standford Research Institute Problem Solver

A problem solver planner that attempts to find a sequence of operators in a space of world models to transform a given initial world model into model in which a given goal formula can be proven[1] designed by Richard E. Fikes and Nils J. Nilsson.

This Framework for problem solving has been central to much of the research in Artificial Intelligence[1]

The strategy is to apply all of the applicable operators to the initial world model to create a set of successor models, it would continue to apply all applicable operators to these successors and to their descendants until a model was produced in which the goal formula was the theorem[1]

PDDL – Planning Domain Definition Language

Introduced as a computer-parsable, standardized syntax for representing planning problems and has been used as the standard language for the international planning competition since 1998 [2]

PDDL describes the initial and goal states as conjunctions of literal and actions in terms of their preconditions and effects[2]

Since it has been used as international language so generalizing a common language to represent and solve the problems will contribute in the development of AI research field.

WARPLAN

The first planner to be written in a logic programming language (Prolog) and it is only 100 lines of code[2]

It's a goal regression planning technique which the steps in totally ordered plan are reordered to avoid the conflict between sub-goals[2]. The planner introduced by Waldinger and Warren WARPLAN[2]

References

1. Richard E. Fikes, Nils J. Nilsson, STRIPS: A New Approach to the Application of Theorem Proving to Problem Solving
2. Stuart J. Russell, Peter Norvig, AI: A Modern Approach (3rd Edition)