

STRIPS language

R. E. Fikes, N. J. Nilsson: "STRIPS: A New Approach to the Application of Theorem Proving to Problem Solving"

STRIPS is a formal language (based on first order logic) used as an input to an automated planner researched at Stanford under the same name. Its basis is comprised of operators that correspond to an action routine, which could affect a world model described using wffs (well-formed formulas). Each operator is defined via effects and conditions under which it's applicable. Nowadays STRIPS is a base for most of the languages used to express automated planning problem (action languages).

Satplan

H. Kautz, B. Selman: "Planning as Satisfiability"

This paper explains how there is no theoretical support for stating that finding solution for planning problems (and other problems in AI) expressed in basic propositional logic is any harder than solving same problems in predicate logic. It turns out that formulating planning as a set of propositional clauses and then using randomized greedy algorithm GSAT can lead to impressive results. This powerful approach to domain independent planning resulted in state of the art algorithms that, despite being general purpose planners, achieved (and often exceeded) performance of planners based on predicate search paradigms. Satplan also greatly influenced creation of STRIPS-Like language which is one of the most widely used action languages today.

Graphplan

M. L. Furst, A. L. Blum: "Fast Planning Through Planning Graph Analysis"

Defining planning problem in STRIPS domain had been greatly expressive however it had many technical difficulties. Hence STRIPS-Like planning language was born, which preserved some of STRIPS' expressiveness at the same time restricting to only propositional logic. Graphplan was a major advance in STRIPS-Like planning outperforming total-order planner Prodigy and partial-order planner UCPOP by orders of magnitude. Graphplan made researchers think about other, fundamentally different, frameworks and in a way ended "plan-space search" era focusing on flow in the network flow sense.