1 AIND: RESEARCH REVIEW

The first known planning system is called STRIPS (Stanford Research Institute Problem Solver), developed by Fikes and Nilsson in 1971[1]. It established what is still the base for most of the automated planning languages today – it has had a huge impact. It consisted of start states, goal states, actions with pre- and post-conditions, all present in current planning systems.

A second very influential planning system is called SATPLAN, meant for "Planning as Satisfiability".[2] It converts a planning problem into a boolean satisifiability problem which is subsequently solved using methods for establishing satisfiability. From Wikipedia[3], "Given a problem instance in planning, with a given initial state, a given set of actions, a goal, and a horizon length, a formula is generated so that the formula is satisfiable if and only if there is a plan with the given horizon length."

Finally, a third major development was GRAPHPLAN out of Carnegie Melon University, which was a new algorithm for automated planning.[4] GRAPHPLAN uses input in the STRIPS format and gives a sequence of actions to reach the goal state (should one be possible). It uses a planning graph, which at the time was very novel. The graph reduces the amount of search time necessary when compared to the previous standard exploration of the state space.

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[1] Fikes, RE and Nilsson, NJ (1971). "STRIPS: A new approach to the application of theorem proving to problem solving."
[2] HA Kautz and B Selman (1992). "Planning as satisfiability." In Proceedings of the Tenth European Conference on AI, pages 359-363
[3] https://en.wikipedia.org/wiki/Satplan

[4] A. Blum and M. Furst (1997). Fast planning through planning graph analysis. Artificial intelligence. 90:281-300.