Planning Research Review

# STRIPS

The early days of planning research were dominated by a focus on apply theorem-proving to solve various AI problems due to the prominence of reasoning spurred by the desire to create a human-like intelligence1. This focus led to the development of situational calculus, but the enormity of completely defining all the action effects and particularly frame axioms, which describe states unaffected by actions, for any non-trivial problem was a serious limitation1. In 1971, Richard Fikes and Nils Nilsson introduced STRIP (STanford Research Institute Problem Solver). Among the most important and lasting contribution of this system is the assumption that most state representations of the planning problem (referred to in the paper as well-formed formulas, or wffs), does not change in-between actions2. With this assumption, STRIPS defined actions as composing of three clauses: preconditions, adds, and deletes. Preconditions are requirements that must be true before an action can happen. Adds are states that the action creates in the problem world, and Deletes are states that an action removes from the problem world. These concepts remain in use today despite enormous advances in planning over the intervening decades1.

# GRAPHPLAN

Graphplan introduced the use of a compact representation of the state space called a planning graph. By computing various potential compatibility of nodes in the search graph,

RELAXED PLANNING

# References

1. Progress in AI Planning Research and Applications, Derek Long, Maria Fox, 2002.
2. STRIPS: A New Approach to the Application of Theorem Proving to Problem Solving, Richard E. Fikes, Nils J. Nilsson, 1971