Research Review

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1 Introduction

This document seeks to present a short overview of some major breakthroughs in the field of Planning within Artificial Intelligence.

2 STRIPS

Strips was the first major planning system in history. It was developed at the Stanford Research Institute as a part of the software for a robotics project. It sought to investigate a space of models and find a sequence of operators that took an initial system to a desired state.

Although its algorithmic approach doesn't find much use today, the representation language it originated is hugely influential and is very close to what is still used as the "classical"language today. Developments upon this language have led to many useful description languages, among which are ADL and PDDL.

3 WARPLAN

WARPLAN was introduced by David Warren in 1974 and is notable because it introduced the goal-regression planning as a solution to the interleaving problem, allowing for steps within a plan to be reordered so as to generate a valid solution.

This planner was also revolutionary because it was the first to be written in a logic programming language, departing from the standard of writing such

software using linear programming, showing a planner could be much shorter and more efficient than what was the standard at the time. The whole of WARPLAN takes only 100 lines of code, which in comparison makes other planners abailable then look huge and cumbersome.

4 GraphPlan

This system, developed by Avrim Blum and Merrick Furst in 1995 revitalized the field of planning. The usage of planning graphs caused it to be a lot faster in comparison to other partial-order planners available then. The introduction of this approach was revolutionary and caused many similar planners to follow, such as the IPP (97) and SGP (98).

References

1. STRIPS: A New Approach to the Application of Theorem Proving to Problem Solving - Richard Fikes and Nils Nilsson

2. Artificial Intelligence: A Modern Approach - Stuart Russel and Peter Norvig