Graph Plans

Graph Plans have come along way over the past few years in developing methods where goal states can be reached using the conversion of problems into a propositional conjunctive form, to yield elegant planners. One of these methods is known as the graph-extension approach. In this approach, the planning graph is extended in time until we have found our goal, then it performs a backward-chaining search on the graph, looking for the best plans to solve the initial problem; in the event no solution was found, the cycle will keep repeating, extending the graph further and further as it goes. Some benefits of this approach include getting optimal results at a faster rate (in a polynomial sized approximation).

STRIPS

STRIPS is an automated planning technique that involves the execution of a domain and a problem to find a goal. The domain is described using objects, actions, preconditions and effects, whereas a problem consists of an initial state and a goal state. Today, STRIPS are written using Planning Domain Definition Language. The advantage of using STRIPS is that the actions can be extracted into feature based representations, thus creating conditional effects; this is important because it can create more efficient algorithms.

Planning Domain Definition Language

Planning Domain Definition Language or PDDL for short was created to standardize the different planning languages. It is a combination of STRIPS and ADL. It is a language that has slowly been evolving to solve complex problems using the simplicity of the English Language. Some advancements include the release of PDDL + , NDDL and ect.

How They All Relate

A new planning approach in analyzing and understanding data is called a Planning Approach. In a planning approach, the planner or paradigm used is called a Graph plan. Graph Plans use STRIPS as a basic representational outline, and STRIPS are written in PDDL. PDDLs are used to represent our problem using the English Language.

References

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