

Lecture #5: Planning graph and Graphplan

What is the major difference between classical planning and neoclassical planning?

What type of relaxation is used when constructing a planning graph?

Define formally the relation of independence among actions.

Prove that if a set of independent actions is applicable to a given state then the state obtained after applying any permutation of these actions is unique.

What type of plan is found by the Graphplan algorithm? Hint: compare it with the sequential plan.

What is no-op?

Is it possible that a pair of mutex propositions becomes non-mutex in some future layer? And what about a pair of action mutexes?

Is it true that a set of propositional mutexes at layer $k+1$ is a subset of proposition mutexes at layer k ?

How is propositional mutex used during construction of planning graph?

What is the difference between mutex and nogood?

If the planning graph contains a layer, where all pairs of goal propositions are non-mutex, does it guarantee that a plan exist?

Can the Graphplan algorithm detect if no plan exists?

What assumption is Graphplan using about the preconditions of actions? Can we translate any domain model (description of operators) to a model satisfying this assumption? How?

Do the actions at planning graph depend on the goal?