

## **Research Review**

The brief introduction of important historical developments in the field of AI planning and search.

### **I. Standard representation of planning problem.**

The first automated major planning system is STRIPS which developed by Richard Fikes and Nils Nilsson in 1971 at SRI International. It is based for most of the languages for expressing automated planning problem instance used today. The system compose an initial state, goal states and set of actions and find a plan which is the sequence of actions that can be executed from the initial state to a goal state.

### **II. Linear Planning.**

In early 1970, planners generally considered totally order action sequences. This approach called linear planning was soon discovered to be incomplete. The basic idea is that work on one goal until completely solved before moving on to the next goal. That will be efficient strategy if goal achievements do not interact but will be in-efficient if goal achievements can interleave with each other.

### **III. Partial-order planning.**

Partial plan specifies all actions that need to be taken but does not specify an exact order for the actions. The first clear formal exposition was TWEAK, a simple planner to allow proofs of completeness and intractability of various planning problems. The most successful state-space searcher to date is FF which relied on forward state space search and heuristic evaluation by using ignoring delete lists.

## References

Artificial Intelligence: A Modern Approach (3rd Edition)

<https://en.wikipedia.org/wiki/STRIPS>

<https://www.cs.cmu.edu/~reids/planning/handouts/Linear.pdf>

[http://artint.info/html/ArtInt\\_209.html](http://artint.info/html/ArtInt_209.html)