Research Review

FF Planning System

- Winner of classical track of International Planning Competition at ICAPS 2000.
- Contains 2 parts: Relaxed GRAPHPLAN as heuristic estimator, and Enforced Hill-climbing as search strategy.
- Article: http://www.cs.toronto.edu/~sheila/2542/s14/A1/hoffmannebel-FF-jair01.pdf

FastDownward Planning System

- Winner of classical track of International Planning Competition at ICAPS 2004.
- It contains 3 phases: Translation, Knowledge compilation and search.
- The problem is translated into "multi-valued planning tasks" for better searching.
- In knowledge compilation phase, the critical information about the planning task is compiled into a number of data structures for efficient access. Domain transition graphs, causal graph, successor generator and Axiom evaluator is built for searching phase.
- Several search algo can be choosed: Greedy best first search, Multi-heruistic best first search and Focused iterative-broadening search.
- Article: http://gki.informatik.uni-freiburg.de/papers/helmert-jair06.pdf

LAMA Planner

- Winner of classical track of International Planning Competition at ICAPS 2008.
- Based on FastDownward Planning System
- Causal graph heurisic is replaced with new heurisic derived from landmarks.
- LAMA weighs the estimated cost-to-go (as a measure of plan quality) against the estimated goal distance (as a measure of remaining search effort) by combining the values for the two estimates.
- After finding an initial solution with a greedy best-first search, it conducts a series of weighted A$*$ searches with decreasing weights, restarting the search each time from the initial state when an improved solution is found.
- Article: http://www.jair.org/media/2972/live-2972-5181-jair.pdf