Planners

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PUI (Planning in Artificial Intelligence)

IPC

International Planning Competition

- 1998, 2000, 2002, 2004, 2006, 2008, 2011, 2014,... 2017?
- http://www.icaps-conference.org/index.php/Main/Competitions

Planners

Sub-optimal / Satisficing

- FF (Fast Forward, 2001)
  - http://fornix.felk.cvut.cz:5000/ff
  - Forward-chaining heuristic state space search
  - Enforced hill-climbing / Breadth-first search
  - FF heuristic (relaxation)

  Hoffmann, Jörg. "FF: The fast-forward planning system." AI magazine 22.3 (2001): 57.

Planners

Sub-optimal / Satisficing

- LAPKT (Lightweight Automated Planning ToolKiT, 2014)
  - http://fornix.felk.cvut.cz:5000/siw
  - http://lapkt.org (Many configurations)
  - SIW
    - Sequence of iterated breadth-first searches using relaxed plans for prunning
    - Exploiting atomic goals

Lipovetzky, Nir, and Hector Geffner. "Width-based algorithms for classical planning: New results." Proceedings of the Twenty-first European Conference on Artificial Intelligence. IOS Press, 2014.

Planners

Sub-optimal / Satisficing

- Lama (2009,2011)
  - http://fornix.felk.cvut.cz:5000/lama
  - Iterated Weighted A*
  - Multi-heuristic search (FF, Landmarks)
  - (inadmissible)

  Richter, Silvia, and Matthias Westphal. "The LAMA planner: Guiding cost-based anytime planning with landmarks." Journal of Artificial Intelligence Research 39.1 (2010): 127-177.

Planners

Sub-optimal / Satisficing

- PROBE (2011)
  - http://fornix.felk.cvut.cz:5000/probe
  - GBFS + relaxation heuristic (h_{add})
  - From each state a greedy probes with highly informed heuristics

    Lipovetzky, Nir, and Hector Geffner. "Searching for Plans with Carefully Designed Probes." ICAPS. 2011.

Planners

Sub-optimal / Satisficing

- Mercury (2014)
  - http://fornix.felk.cvut.cz:5000/mercury
  - GBFS + Red-black relaxation heuristic

    Katz, Michael, and Joerg Hoffmann. "Mercury planner: Pushing the limits of partial delete relaxation." Proceedings of the 8th International Planning Competition (IPC-2014) (2014).

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Sub-optimal / Satisficing

- yahsp3 (2014)
  - http://fornix.felk.cvut.cz:5000/yahsp3
  - Heuristic search with lookahead using relaxed plans
  - Not on FD codebase

  Vidal, Vincent. "YAHSP3 and YAHSP3-MT in the 8th international planning competition." Proceedings of the 8th International Planning Competition (IPC-2014) (2014): 64-65.

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Optimal

- FD-ms (2011)
  - http://fornix.felk.cvut.cz:5000/ms
  - A*
  - Merge&Shrink abstraction heuristic

    Nissim, Raz, Jörg Hoffmann, and Malte Helmert. "Computing perfect heuristics in polynomial time: On bisimulation and merge-and-shrink abstraction in optimal planning." 22nd International Joint Conference on Artificial Intelligence (IJCAI'11). 2011.

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Optimal

- FD-lmcut (2011)
  - http://fornix.felk.cvut.cz:5000/lmcut
  - A*
  - LM-Cut landmark heuristic

    Helmert, Malte, and Carmel Domshlak. "Landmarks, critical paths and abstractions: What's the difference anyway?." Dagstuhl Seminar Proceedings. Schloss Dagstuhl-Leibniz-Zentrum für Informatik, 2010.
    Helmert, Malte, and Carmel Domshlak. "LM-Cut: Optimal planning with the landmark-cut heuristic." Seventh international planning competition (IPC 2011), deterministic part (2011): 103-105.

Planners

Optimal

- SymBA* (2014)
  - http://fornix.felk.cvut.cz:5000/symba
  - A* in BDD (binary decision diagram) representation
  - Perimeter-based abstraction heuristic (built from goal)

  Edelkamp, Stefan, Peter Kissmann, and Alvaro Torralba. "BDDs Strike Back (in AI Planning)." AAAI. 2015.

Planners

Temporal

- OPTIC (2012)
  - http://temporal-solver.herokuapp.com
  - https://nms.kcl.ac.uk/planning/software/optic.html

  Benton, J., Amanda Jane Coles, and Andrew Coles. "Temporal Planning with Preferences and Time-Dependent Continuous Costs." ICAPS. Vol. 77. 2012.

Planners

Temporal

- Temporal Fast-Downward (2009)
  - TBA

    Eyerich, Patrick, and Robert Mattmüller Gabriele Röger. "Temporal Fast Downward." (2009).