ICAPS 2009 Workshop on

Generalized Planning: Macros, Loops, Domain Control

September 20th, 2009, Thessaloniki, Greece

Program Committee

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Important Dates

Submission	June 28th
Notification	July 22nd
Final Versions	Aug 8th

Organizing Committee

Christian Fritz (co-chair)
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Research in classical planning has led to significant improvements in planner performance. However, lack of scalability with respect to the number of objects in the domain remains a longstanding open problem.

We invite contributions from researchers working to address this challenge. Possible research directions include generating plans that solve multiple problem instances by employing rich plan structures such as loops, using domain control knowledge for reducing the cost of planning, and other related areas. Common to many of these approaches is the notion of a generalized plan -- a rich representation that resembles a computer program with branches and loops. While approaches exploiting such representations have demonstrated promising results, many fundamental challenges remain.

The broad goal of this workshop is to provide a forum for discussion and evaluation of techniques for building scalable planners that utilize rich representations for expressing knowledge and solution plans. An additional objective is to re-evaluate some of the most fundamental, traditionally accepted notions in planning about plan structure and representation of domain knowledge. Some of the questions motivating this workshop are:

- How can we effectively find, represent and utilize high-level knowledge about planning domains?
- What makes finding plans with complex control structure difficult?
- What separates planning problems from program synthesis problems?
- What are the computational limits to the feasibility of these problems?
- Can restricted -- practical, yet efficiently solvable -- formulations of generalized planning be developed?

Topics

Topics of interest to this workshop bring together research being conducted in a range of areas, including classical planning, knowledge engineering, partial policies and hierarchical reinforcement learning, plan verification, and model checking. Potential topics include but are not limited to:

- generating plans with loops
- generating parametrized plans
- instantiating parametrized plans
- learning macro actions
- planning with complex actions
- learning domain control knowledge
- planning with domain control knowledge (e.g., Golog, HTNs, control rules)
- reasoning about complex actions
- planning with partial policies
- plan verification
- generating robust or partial schedules

as well as applications of these ideas in:

- planning with plan scripts or schemas
- work-flows
- web service composition
- grid services

Paper Format and Submission

We invite technical papers (up to 8 pages), position papers (up to 2 pages) and papers with clear and concise formulations of open problems and potential solution approaches (up to 4 pages). Non-technical papers can be more exploratory in nature; however, complexity analyses of proposed solutions or comparisons with existing approaches are encouraged. We invite submissions describing either work in progress or mature work that has already been published at other research venues. Submission of previously published work in whole or in part may be in the form of a resubmission of a previous paper, or in the form of a position paper that overviews and cites a body of work.

All papers should be typeset in the AAAI style described at http://www.aaai.org/Publications/Author/author.php. Papers should be submitted in PDF form by email to genplan09 "at" cs.toronto.edu, with "Genplan-09 submission" as the subject. Queries about the submission procedure or other details can also be sent to this address.

While the workshop itself will not have any registration fees, workshop participants will need to register for ICAPS-09.

http://www.cs.umass.edu/~siddhart/genplan09