

TAMPRA 2012

Combining Task and Motion Planning for Real-World Applications

Workshop at ICAPS 2012

Atibaia, São Paulo, Brazil

June 25–29

[http://icaps12.poli.usp.br/icaps12/
workshops/tampira](http://icaps12.poli.usp.br/icaps12/workshops/tampira)

A longstanding aim of research in AI has been to employ discrete task planning capabilities in the service of mobile robots. Since the early days of Shakey, the planning community has worked to build algorithms that would allow a robot to reason about its own actions before (or while) carrying them out physically. Recent advances in artificial vision, manipulation, motion planning and control have done a great deal to bring this vision closer to fruition.

Despite these promising developments, existing commercial systems rarely exhibit fully autonomous task and motion planning capabilities. This is not due to a lack of interest, but rather to our lack of understanding how discrete task planning can be integrated with advanced motion planning techniques. Research has not yet produced the algorithmic and theoretical results necessary to integrate techniques for automated decision making at the task and motion planning levels. The major challenges are twofold: real-world applications pose complex requirements, such as dynamic environments and real-time, continuous operation; and there is an inherent difficulty in combining the radically different search and inference procedures underlying the two forms of planning.

Focus. In the last few years, autonomous mobile robots have become a commercial reality. Despite the increasing availability of autonomous solutions, by and large, these systems rely on pre-calculated motions and static, pre-computed plans. Companies have a real interest in increasing the level of automation provided by their solutions, both at the task planning and at the motion planning levels. This workshop aims to bring an application focus to the problem of integrating these two forms of planning, and to ground the scientific problems underlying such integration.



22nd International Conference on Automated Planning and Scheduling
Atibaia, São Paulo, Brazil

Topics of interest

TAMPRA is open to solutions for any combination of task and motion planning techniques. Preference will be accorded to papers that include experimental work in real-world applications. Specific topics of interest include, but are not limited to the following:

- Experimental results from fielded systems
- Reasoning with kinodynamic constraints
- Constraint-based reasoning
- Planning under uncertainty
- Geometric, temporal, and/or spatial reasoning
- Resource reasoning / scheduling
- Manipulation planning techniques
- Meta-CSP techniques for integrated reasoning
- HTN, classical and timeline-based planning
- Decision-theoretic planning

Workshop format

TAMPRA is a one-day workshop. Accepted papers will be presented in short sessions (2-3 papers) on a common theme.

Submissions

We welcome submissions of two types: technical papers, and position papers. The former can be up to eight pages in length, the latter up to four. Papers may address both technical solutions and problem statements. All accepted papers will appear in the workshop proceedings. In case of high interest in this workshop, we will pursue publication of a special journal issue to include the best papers.

Submission instructions. Authors should prepare their manuscript according to the AAAI formatting guidelines and style. Papers should be submitted by email in PDF format to:

tampira2012@aass.oru.se

Important Dates

Paper submission deadline: **February 26th, 2012**
Notification of acceptance: **April 13th, 2012**
Camera-ready version due: **April 29th, 2012**

Organizing committee

- Marcello Cirillo – AASS, Örebro University
- Brian Gerkey – Willow Garage
- Federico Pecora – AASS, Örebro University
- Mike Stilman – Georgia Institute of Technology