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## Call for Papers

## HYCAS 2009 – International Workshop on Hybrid Control of Autonomous Systems

Integrating Learning, Deliberation and Reactive Control

held in conjunction with the  
21<sup>st</sup> International Joint Conference on Artificial Intelligence, IJCAI-09  
in Pasadena, California, USA on July 13 2009

### Workshop Objectives

Most of the research on **robot learning** is related to learning certain basic behaviours or skills. Examples where the high-level control strategy of robots (or other agents) was successfully learned are rare. The **deliberative approach** for decision making for autonomous systems was successfully treated in Artificial Intelligence research, following a top-down approach, which has severe limitations in real applications. In the **reactive control paradigm** the idea is that with a combination of purely reactive action selection schemes, intelligent and goal-directed behaviours emerge, which can be seen as a bottom-up approach.

These different paradigms have been known for over two decades, and in today's applications often combinations of learning, deliberation, and reactive control are used. Usually these combinations are used in an ad-hoc or even unconscious fashion. Although there is a number of proposed architectures and huge body of literature, the issue of combining learning, reactive and deliberative control never has been intensively investigated.

With this workshop we wish to bring together researchers from different areas who concentrate on **combinations of learning, planning, and/or reactive schemes for decision making and the control of autonomous systems**. The workshop is open to all members of the AI and Robotics community. We would specifically like to encourage students to participate.

### Relevant Topics

The questions to be addressed in this workshop are:

- How can learning, deliberation and/or reactive control be combined such that the methods can benefit from each other – e.g. by using a common representation?
- What are the challenging domains demanding for hybrid control?
- What are its successful applications?

Papers are invited on all aspects of these questions, including, but not limited to:

- Decision Making
- Modelling of Domains, Capabilities/Affordances and Robot Behaviours
- Agent Learning
- Cognitive Robotics
- Behaviour-based Robotics and Emergent Control
- Developmental and Epigenetic Robotics
- Architectures and Architectural Patterns

### Important Dates

- April 5 2009: Paper Submission (extended!)
- April 30 2009: Notification of paper acceptance
- May 8 2009: Camera ready paper submission
- May 15 2009: Early registration deadline
- July 13 2009: Workshop takes place

Authors of selected articles will be invited to submit an extended version of their workshop paper to a special issue of an international journal on robotics and automation.

**Information for authors and submission on the website <http://www.hycas.org/>**