
Call for Papers: JOURNAL OF UNIVERSAL COMPUTER SCIENCE
Special Issue on: 'ADVANCES IN SPATIAL AND TEMPORAL REASONING'

Journal URL : http://www.jucs.org/ujs/jucs/info/special_issues/in_preparation.html

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Important dates:

Submission: 30 November 2009

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Description and Scope: Qualitative spatial representation and reasoning has evolved as a sub-division in its own right within the broader field of Artificial Intelligence – recent years have witnessed remarkable advances in some of the long-standing problems of the field. For instance, new results about tractability for spatial calculi, explicit construction of models, and characterization of important subclasses of relations, as well as in the development of new areas such as the emergence of integrated spatio-temporal calculi and the use of non-monotonic techniques for dealing with various aspects intrinsic to modeling dynamic spatial systems.

Driven by cognitive approaches that characterize the processing of spatial information within qualitative spatial reasoning, there has been considerable influx of people from other areas within AI, working on qualitative representation and reasoning about spatial change, spatio-temporal interactions, the formal modeling of dynamic spatial systems in general, and the role of classical deduction and abduction for modeling spatio-temporal planning and causal explanation tasks in the context of qualitative spatial calculi. Inextricably lined to space is time, i.e., spatial configurations change over time. Spatial change may also be perceived as being spatio-temporal and a lot of recent work is being devoted to providing useful and well-grounded models to be used as high level qualitative description of spatio-temporal change. Reasoning about space essentially involves reasoning about changing spatial configurations, and in more realistic scenarios, integrated reasoning about space, actions and change. Recent work supporting this paradigm has explicitly addressed the potential interactions between the spatial reasoning domain and the field of reasoning about actions and change & commonsense reasoning – explicit links between some of the epistemological issues relevant to the frame, ramification and qualification problems have surfaced in modeling of dynamic spatial knowledge.

We invite original contributions reporting new theoretical advances related to any of the above aspects of spatial and temporal reasoning, construction of new spatial calculi that serve application-specific needs, the formal modeling of dynamically varying spatial knowledge, the role of commonsense reasoning and non-monotonic forms of inference in a spatial context, and techniques and tools that are consistent with standard results within the community from an ontological and computational viewpoint.

About the Issue: This special issue is focussed on theoretical results and complements another special issue on “*Emerging Applications of Spatial and Temporal Reasoning*” that will be published within the Journal of Spatial Cognition and Computation in 2010. Together, both special issues have been conceived with the aim to build on

the results of the thematically complementing events / workshops that have been organized at different venues, and with a different focus, in 2009.

Submission: All papers will undergo the special issue guidelines of the journal, and will have to meet the other publication guidelines at the review and camera-ready stages. See the journal website for formatting details and typesetting templates. Submissions no more than 20 pages should be made directly by email to Hans Guesgen. Please specify “*JUCS S-T 2009*” as the email subject. For all submissions, comments and queries, please email *Hans Guesgen* at: **h.w.guesgen At massey ac nz**

Kindly note the following guidelines for the journal:

- Special issue guidelines: http://www.jucs.org/ujs/jucs/info/special_issues/special_guidelines.html
(*points 6, 9 and 14 are especially important for authors*)
- Formatting guidelines: http://www.jucs.org/jucs_info/submissions