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**Call for Papers: JOURNAL OF SPATIAL COGNITION AND COMPUTATION**  
**Special Issue: 'EMERGING APPLICATIONS OF SPATIAL AND TEMPORAL REASONING'**

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**Issue Editors:**

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Journal URL : <http://www.tandf.co.uk/journals/titles/1387-5868.asp>

**Important dates:**

Submission: 30 November 2009

Notification: 15 February 2010

Publication in 2010



**Description and Scope:** The field of 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 importing of non-monotonic techniques for dealing with various aspects intrinsic to dynamic spatial systems. 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 also 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. 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, such as computer vision and robotics, working on qualitative representation and reasoning about spatial change, spatio-temporal interactions, and the formal modelling of dynamic spatial systems in general. Qualitative conceptualizations of space and tools/techniques for efficiently reasoning with them being well-established, there is now a clear felt need within the community to utilize the tools and formalisms that have been constructed in the recent years in novel application scenarios and, as witnessed in the content of recent and upcoming events, even a focus on evaluation standards and benchmarking problems for qualitative formalisms.

We invite original contributions emphasizing applications of spatial and temporal reasoning in novel domains. We encourage research that applies formal spatial and temporal reasoning methods, techniques and tools and is consistent with standard results within the community from an ontological and computational viewpoint. The special issue has been conceived with the aim to build on the results of the following thematically complementing events that have been organized in 2009: the AAAI Spring Symposium 2009 on Benchmarking of Qualitative Spatial and Temporal Reasoning Systems<sup>1</sup> (USA) focuses on the development of theoretically well-founded and community-wide accepted evaluation standards and benchmarking problems for qualitative formalisms, reasoning techniques, and implemented reasoning systems. The *Workshop on Spatial and Temporal Reasoning*<sup>2</sup> at IJCAI 2009 (USA) and the closely related *Special Session on Spatial and Temporal Reasoning*<sup>3</sup> at ICAI 2009 (India) aim at achieving a balance between fundamental topics and applications, with the former also involving demonstrations of implemented systems. The *Workshop on Spatial and Temporal Reasoning for Ambient Intelligence Systems*<sup>4</sup> at COSIT 2009 (France) focuses on the application potentiality of formal space and time modelling and reasoning in the emerging niche of ambient intelligence – smart spaces, building automation, ambient assisted living etc. The issue is open to all works that address the thematic requirements, as set out in this call and encompassed by the scope of the aforementioned events. If in doubt, please do contact the editors with your questions.

**Submission:** All papers will undergo the review procedures of the journal, and will have to meet the publication guidelines at the review and camera-ready stages. See the journal website for formatting details and typesetting templates. Submissions should be made using the online submission system of the journal. Please select/specify “*Emerging Applications*” as the special issue. For questions, please email `bhatt AT informatik . uni-bremen . de`

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<sup>1</sup>AAAI Spring Symposium: <http://qsr.informatik.uni-freiburg.de/aaai09-bench/>

<sup>2</sup>IJCAI 2009: <http://www-ist.massey.ac.nz/hwguesgen/spacetime/ijcai09strws/>

<sup>3</sup>IICAI 2009: <http://www.iiconference.org/iicai09/str.html>

<sup>4</sup>COSIT 2009: <http://www.cosy.informatik.uni-bremen.de/events/cosit09-ami/>