

Call for Papers

## IO-SPACES

# Interfacing Indoor and Outdoor Spaces

[Web: <http://www.iospaces.eu>]

To be held at GIScience 2014

September 23, 2014, Vienna, Austria

The interaction of indoor and outdoor spaces, how they connect and separate, is an under-researched topic in GIScience. This is true for many aspects, from human behavior and cognitive processes to formal models and location-based services. Seamless navigation, evacuation of people, or services provided by autonomous robots or drones require a model of the surrounding environment, usually a combination of outdoor and indoor spaces. However, moving from indoor to outdoor spaces or vice versa provides a range of physical, cognitive, and technical challenges.

This full-day workshop will address these issues, approaching them from an interdisciplinary perspective. We welcome contributions from anyone who is interested in better understanding and integrating the interface between indoor and outdoor spaces. A particular focus will be on information processing and presentation under time pressure and/or high cognitive load (e.g., in evacuation situations).

We invite three different kinds of submissions: 1) research papers and 2) position statements of up to four pages describing recent findings or arguing for particular research directions, and 3) demonstration papers of up to two pages proposing the demonstration of applications in the context of the interfacing indoor and outdoor spaces. An international committee of experts will review all submissions, and participants will be selected based on the reviews we receive.

The workshop itself will be an interactive day with a mixture of presentations and demonstrations aiming at lively discussions and fostering collaboration amongst the participants.

Topics relevant (but not limited) to the workshop include:

- Cognitive principles involved in switching from indoor to outdoor spaces (and vice versa)
- Cognitive effects of sudden changes of environmental visibility and accessibility, as they typically occur in changes from indoor to outdoor environments
- Ways to guide people across the two environments, e.g., services that can assist in both environments

- Ways to guide people with special needs, e.g. route descriptions for visually impaired or wheelchair users
- Efficient communication in evacuation situations
- Visualizations of indoor/outdoor transitions
- Data structures, algorithms and modeling tools that allow for bridging between the two types of environments (e.g., for routing)
  - that match the user's cognitive model of indoor and outdoor spaces
- Modelling indoor, outdoor and transition spaces for machine and human use
- Seamless positioning mechanisms that allow for localization in in- and outdoor environments
- Frameworks that allow mobile navigation systems to connect to the buildings' infrastructure to access doors, lights, and elevators. This is particularly relevant for accessibility issues
- On-mobile navigation between indoors and outdoors
- Crowdsourcing indoor and outdoor maps and routes, including routes between indoors and outdoors

### **Submission guidelines**

Please use the Springer LNCS formatting guidelines for your contributions:

<http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0>

Research papers and position statements can have up to four (4) pages; demonstration papers up to two (2) pages describing the nature of the demo and its relation to the workshop. Demos can be anything running, e.g., a website, a mapping tool, a navigation app.

Submit your paper via EasyChair using the following URL:

<https://www.easychair.org/conferences/?conf=iospaces2014>

### **Important Dates**

Jun 1	Submission deadline
Jul 15	Notification of acceptance
Aug 11	End of GIScience early bird registration
Aug 15	Revised papers due
Sep 23	Workshop day at GIScience

### **Organizers:**

Kai-Florian Richter, Department of Geography, University of Zurich, Switzerland.

Falko Schmid, Cognitive Systems, Dept. for Informatics, University of Bremen, Germany.

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### **Contact**

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