

CALL FOR CONTRIBUTIONS

AAAI 2010 Spring Symposium "Cognitive Shape Processing"

March 22-24, 2010, Stanford University, CA

<http://www.spatial-cognition.de/CSP/>

Important Dates

Submission of contributions: October 2, 2009

Notification of acceptance: November 6, 2009

Camera-ready copies of contributions: January 16, 2010

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Description

Real-world spatial problems typically deal with diverse types of spatial knowledge at the same time and involve complex objects with meaningful and specific shapes. Understanding mental processing of knowledge about shapes thus seems essential for understanding mental processing

of spatial knowledge in real world scenarios. With the term Cognitive Shape Processing we refer to all forms of knowledge processing involving shape information that are related to, inspired by, or derived from principles found in natural cognitive systems.

The goal of the symposium is to bring together researchers from artificial intelligence and cognitive science to promote the understanding – from a cognitive point of view – of how shape information can be acquired, represented, retrieved, (re-)constructed, and integrated with other types of spatial information.

Sample questions of interest in cognitive shape processing are:

- How is shape knowledge represented in and retrieved from long-term mental storage and from technical knowledge bases?
- Is shape knowledge compositional (i.e., constructed from elementary shapes) or are specific shapes uniquely represented?
- Is shape knowledge contour-based or area-based? Or neither?
- How do prototypical (categorical) shapes relate to specific shapes?
- How does partial shape matching work, i.e. when only parts of a specific shape are known or visible?
- How can varying levels of granularity be modeled in shape processing?
- Given that visual and spatial aspects are involved in spatial knowledge processing, how does shape information interact with these modes?
- Is shape information dealt with in 2D, 2½D, 3D, ... and how does dimensionality scale up/down?
- What is the role of attention-related processes in cognitive shape processing? How does shape knowledge guide (visual) attention?
- What is the relation between control processes in visual perception and knowledge about shapes?
- How can brain-imaging, eye movement, and behavioral studies contribute to the understanding of cognitive shape processing?
- How do different modes of shape perception interact (e.g. visual and haptic)?

The symposium will be scheduled to provide extensive discussion time and group interactions.

Submission Information

Please email submissions of 4-6 pages (preferably in AAAI format as PDF) to barkowsky@sfbtr8.uni-bremen.de. Submissions can be position statements, work in progress, or completed work. For more information please see www.spatial-cognition.de/CSP <<http://www.spatial-cognition.de/CSP/>> and www.aaai.org/Symposia/Spring/sss10.php <<http://www.aaai.org/Symposia/Spring/sss10.php>> .