DAGSTUHL SEMINAR

http://www.dagstuhl.de/15192

Day-by-day Planning

	AM					PM		Evening
Arrival May 3	09:00:00 AM	10:00-11:00		11:30-12:30	12:30 - 14:00	14:15-15:45	16:00-17:00	
								Welcome address
Day 1 May 4	General intro, *Noise or Knowledge?* **Casati, Cavanagh Santos**	Main topic: psychology. Presentations by **Cavanagh (*What does vision know about shadows?*) Kennedy (*Shape-from-shadow polarity*), O'Dea (*Non-illusory Failures of Constancy*),**	Brk	Presentations by **Casati (*There is still room at the bottom*) Wijntjes (*Perception of shadows in Paintings*)**	Lunch	Breakout groups **1 Unused information, 2 architecture of visual system, 3 Historical record (painting, astronomy)**	Restitution and end-of-day discussion	Body and the shadow, improvisation by **Bizzarri**
Day 2 May 5	Main topic: artificial intelligence and computer vision Presentations by **Dee (*Why does computer vision find shadows so problematic?*), Santos (*Shadows in AI and Robotics*), Fol Leymarie (On medialness-based shape representation: recent developments and food for thought), Raynal *(Leveraging the Information in the Shadows of Synthetic Aperture Radar)***		Brk	Discussion	Lunch	Breakout groups **1 Usable information,**	Restitution and end-of-day discussion	
Day 3 May 6	Main topic: art, rendering Presentations by **Toyama *(*The systematic introduction of Chiaroscuro in 15th century Florence and the symbolic shadow in Sienese Painting *),* Sharpe (*Shadow Messages in the arts*); Danhoni (Shadows on the moon and the sun by CIGOLI and GALILEI: The Copernican planetary inside the Paolina´s Chapel of Santa Maria Maggiore.); Toyama (Un-naturalistic painting and the lack of shadow: History of shadow in 18th-19th century Japanese paintings and woodblock prints)**		Brk	Discussion	Lunch	Free afternoon		
Day 4 May 7	Main topic: architecture, conceptual system, spatial reasoning,		Brk	Discussion Tentative Topics: 1. Lessons from the art corpus. 2. Resarch	Lunch	Writeup time	End-of-day discussion	

	Presentations by **Tversky (Can uses of shadows in language and art inform perception of shadows?), Beraldo (Daylight metrics for building design), Freksa (*Shadow and friends illuminate space*), Bhatt/Schultz**		directions in art studies				
Departure May 8	Final discussion, prospects for research (e.g. Listing subjects for prospective MA theses; research projects; further venues)						

Notes:

- The mornings will be devoted to short talks (maximum 20 min) and related discussions;
- Shorter talks are welcome;
- Participation in the seminar without giving an oral presentation is also welcome;
- Demos will be presented in the afternoons;
- The afternoon of day 4 will be devoted to writing up the ideas developed during the seminar as research projects.

Themes for discussions (a non-exhaustive list, suggestions are welcome!):

- conditions of acceptability of incorrect shadows. We know that the visual system accepts incorrect and even impossible shadows, but we do not know yet the boundaries of incorrectness;
- conditions under which a spot in the visual field is seen as a shadow or as something else (permanent surface feature, spot of light);
- investigate the perception of shadows in movement; these are greatly developed in computer graphic, not so much studied in empirical psychology;
- an inventory of cognitively relevant shadows in the artistic corpus;
- we want to understand the extent of which the consideration of the knowledge-content in shadows can decrease the complexity in the machine understanding of a scene;
- the human perceptual system is tuned to perceive shadows that are near the observer as darker than shadows that are further away, this seems to be linked to our attention mechanism that assigns distinct relevance measures to more important objects. However, when processing shadows, a computer vision system is incapable of making this distinction, which makes the computation of shadows in a complex scene a hard procedure. We want to investigate how the attention mechanism linked to shadow perception in humans can be used as a model to develop more efficient computer vision systems.

Deliverables:

- a research agenda (n.b.: research questions, i.e. MA thesis-sized topics)

- creation of a “shadow team”, label for future events, conferences, classes; with associated shadow-list or social network group; shadow website with repository of articles
- a fact book on shadows
- the definition shadow research/terminology standards