



Bielefeld, Germany

December 1st, 2014

Keynote:

Constantin A. Rothkopf, TU Darmstadt & FIAS

*Vision through tasks:
from the Bongard problems to
sandwich making*

isacs2014.joanneum.at

The Symposium

The capacity to attend to the relevant has been part of Artificial Intelligence (AI) systems since the early days of the discipline. Currently, with respect to the design and computational modelling of artificial cognitive systems, selective attention has again become a focus of research, and one sees it important for the organization of behaviours, for control and interfacing between sensory and cognitive information processing, and for the understanding of individual and social cognition in humanoid artefacts. One may consider selective attention as part of the core of artificial cognitive systems. Within the context of the engineering domain, the development of enabling technologies such as autonomous robotic systems, miniaturized mobile - even wearable - sensors, and ambient intelligence systems involves the real-time analysis of enormous quantities of data. These data have to be processed in an intelligent way to provide "on time delivery" of the required relevant information. Knowledge has to be applied about what needs to be attended to, and when, and what to do in a meaningful sequence, in correspondence with visual feedback.

Suggested symposium topics include, but are not limited to:

- Computational architectures for attention
- Modelling of visual and auditory attention
- Biologically inspired attention
- Attention in robotic / mobile / wearable systems
- Aspects of attention in cognitive psychology, neuroscience, and philosophy
- Attention and control of machine vision processes
- Performance measures for attention enabled artificial systems
- Applications of machine attention

Objectives

The goal of this symposium is to provide an international forum to examine computational methods of attention in cognitive systems from an **interdisciplinary viewpoint**, with the focus on computer vision in relation to robotics, psychology, and neuroscience.

Registration

Please register at isacs2014.joanneum.at.

Organisers

Lucas Paletta

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Giorgio Metta

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Invited Speakers

Ulrich Ansorge

University of Vienna, Austria

Anna Belardinelli

University of Tübingen, Germany

Simone Frintrop

University of Bonn, Germany

Verena Hafner & Guido Schillaci

Humboldt-Universität zu Berlin, Germany

Jean-Marc Odoñez

IDIAP, Switzerland

Dimitri Ognibene

King's College London, United Kingdom

Fiora Pirri

Sapienza, University of Rome, Italy

Alex Priamikov

Frankfurt Institute for Advanced Studies, Germany

Constantin A. Rothkopf (Keynote)

TU Darmstadt & FIAS



Programm

08:50 – 09:00	Symposium Co-Chairs	<i>Welcome to the symposium</i>
09:00 – 09:45	Constantin A. Rothkopf Technical University Darmstadt & FIAS	Keynote: <i>Vision through tasks: from the Bongard problems to sandwich making</i>
09:45 – 10:00	Coffee Break	
Session: Cognitive Aspects of Attention		
10:00 – 10:25	Simone Frintrop University of Bonn, Germany	<i>Saliency-based object discovery</i>
10:25 – 10:50	Fiora Pirri Sapienza, University of Rome, Italy	<i>Attention & running commentaries in unknown environments</i>
10:50 – 11:15	Anna Belardinelli University of Tübingen, Germany	<i>Attentional landscapes for object interaction</i>
11:15 – 11:30	Coffee Break	
Session: Embodiment of Attention		
11:30 – 11:55	Verena Hafner & Guido Schillaci Humboldt-Universität zu Berlin, Germany	<i>Joint attention in humans and robots</i>
11:55 – 12:20	Jean-Marc Odobez IDIAP, Switzerland	<i>Attention recognition: from contextual analysis of head poses to 3D gaze tracking using remote RGB-D sensors</i>
12:20 – 12:45	Thies Pfeiffer University of Bielefeld, CITEC, Germany	<i>Modelling patterns of joint attention: eyetracking studies in human-human and human-virtual agent interactions</i>
12:45 – 14:30	Lunch Break	
Session: Active Vision and Attention		
14:30 – 14:55	Dimitri Ognibene King's College London, United Kingdom	<i>Robotic models of active perception</i>
14:55 – 16:00	CITEC Demos & Coffee Break	
Session: Modeling Human Eye Movements		
16:00 – 16:25	Ullrich Ansorge University of Vienna, Austria	<i>The Cutting Edge in Priming: How Priming of Attention Bridges the Gap Across Cinematic Cuts</i>
16:25 – 16:50	Alex Priamikov Frankfurt Institute for Advanced Studies, Germany	<i>OpenEyeSim: A biomechanical simulator for studying the development of oculomotor control</i>
16:50 – 17:15	Lucas Paletta Joanneum Research, Austria	<i>Three-dimensional recovery of gaze for the modeling of attention in natural environments</i>
19:00	<i>Meeting at Christmas Market</i>	
20:00	Social Event (Dinner)	