



**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](http://isacs2014.joanneum.at).

## Organisers

**Lucas Paletta**

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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	<a href="#">Constantin A. Rothkopf</a> Technical University Darmstadt & FIAS	<b>Keynote:</b> <b><i>Vision through tasks: from the Bongard problems to sandwich making</i></b>
09:45 – 10:00	Coffee Break	
<b>Session: Cognitive Aspects of Attention</b>		
10:00 – 10:25	<a href="#">Simone Frintrop</a> University of Bonn, Germany	<i>Saliency-based object discovery</i>
10:25 – 10:50	<a href="#">Fiora Pirri</a> Sapienza, University of Rome, Italy	<i>Attention &amp; running commentaries in unknown environments</i>
10:50 – 11:15	<a href="#">Anna Belardinelli</a> University of Tübingen, Germany	<i>Attentional landscapes for object interaction</i>
11:15 – 11:30	Coffee Break	
<b>Session: Embodiment of Attention</b>		
11:30 – 11:55	<a href="#">Verena Hafner</a> & <a href="#">Guido Schillaci</a> Humboldt-Universität zu Berlin, Germany	<i>Joint attention in humans and robots</i>
11:55 – 12:20	<a href="#">Jean-Marc Odobez</a> 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	<a href="#">Thies Pfeiffer</a> 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	
<b>Session: Active Vision and Attention</b>		
14:30 – 14:55	<a href="#">Dimitri Ognibene</a> King's College London, United Kingdom	<i>Robotic models of active perception</i>
14:55 – 16:00	CITEC Demos & Coffee Break	
<b>Session: Modeling Human Eye Movements</b>		
16:00 – 16:25	<a href="#">Ullrich Ansorge</a> 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	<a href="#">Alex Priamikov</a> Frankfurt Institute for Advanced Studies, Germany	<i>OpenEyeSim: A biomechanical simulator for studying the development of oculomotor control</i>
16:50 – 17:15	<a href="#">Lucas Paletta</a> 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)	