Speaker:
Prof. Michael Beetz

Title:
"Robotic Agents Performing Human-Scale Everyday Manipulation Tasks - In the Knowledge Lies the Power"

Host:
Prof. Antonis Argyros, CSD-UoC / ICS-FORTH

Abstract:
Enabling robotic service agents to perform natural language instructions such as "flip the pancake" or "push the spatula under the pancake" requires us to equip robots with large amounts of knowledge. To perform such tasks adequately, robots must, for instance, be able to infer the appropriate tool to use, how to grasp it and how to operate it. They must, in particular, not push the whole spatula under the pancake, i.e. they must not interpret instructions literally but rather recover the intended meaning.
In this talk, I will present some of our ongoing research in the European project ROBOHOW, in which we transfer these ideas to autonomous robotics in order to realize knowledge-intensive robot control programs that use the world-wide web as a comprehensive source of knowledge. I will discuss the feasibility of acquiring new plan schemata for web instructions formulated in natural language using video instructions, games with a purpose, and kinesthetic teaching as additional information sources.

Short bio:
Prof. Michael Beetz (**http://ai.uni-bremen.de/team/michael_beetz**) holds the chair on Artificial Intelligence in the Department of Mathematics and Computer Science at the University of Bremen and heads the research group "Intelligent Autonomous Systems". From 2004 to 2012 he has been professor for computer science at the Department of Informatics of Technische Universität München and headed the Intelligent Autonomous Systems group. He has been the vice coordinator of the German cluster of excellence CoTeSys (Cognition for Technical Systems) from 2007-2011 and is coordinator of the EU FP7 integrating project ROBOHOW. Michael Beetz was a member of the steering committee of the European network of excellence in AI planning (PLANET) and coordinated the research area robot planning. He was associate editor of the Artificial Intelligence journal. He is also principal investigator of a number of national and European research projects in the area of AI-based robot control.
Michael Beetz received his diploma degree in Informatics with distinction from the University of Kaiserslautern. He received his MSc, MPhil and PhD degrees from Yale University in 1993, 1994 and 1996 and his Venia Legendi from the University of Bonn in 2000. His research interests include integrated cognition-enabled robotic systems, plan-based control of autonomous robots, knowledge representation and processing for robots, integrated robot learning and cognitive perception.