

RoboCup 2009
GRAZ June 29 - July 5 2009
Stadthalle Graz
www.robocup2009.org 

A glimpse into the future: Visionary talks at the RoboCup 2009

To grant insights into the state of the art of robotics research and to give a glimpse into the possible future of robots and artificial intelligence, six lecturers are giving talks in their special fields – from robots on Mars to intelligent walking aids. The talks will be held in English.



Foresight: Visionary talks at the RoboCup 2009 (© TU Graz/Lunghammer)

Control of Locomotion in Articulated Robots: Taking Inspiration from Vertebrates' Spinal Cord Circuits

Prof. Auke Ijspeert, EPFL – Ecole Polytechnique Federale de Lausanne, Switzerland

Neural networks, which can produce complex rhythmic patterns, are found in the spinal cord of vertebrates. The talk will demonstrate how mathematical models and robots can be utilised as tools in order to better understand how these networks work. Networks of lower vertebrates, such as salamanders, are being recreated; these models are being tested on amphibious robots who can swim and walk. Research is leading to a control model for various kinds of moveable robots, from snake-like to humanoid.

Auke Ijspeert is professor at the Ecole Polytechnique Federale de Lausanne and director of the Biologically Inspired Robotics Group (BIRG).

Time: Tuesday, 30 June 2009, 4 pm

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iWalker: Towards an Intelligent Pedestrian Aid for Senior Citizens

Prof. Ulises Cortés, Polytechnic University of Catalonia, Spain

To be able to propel yourself independently and safely is definitely the most important factor for the quality of life of elderly people. Restrictions in mobility due to age, injury or illness can result in isolation and loneliness. An intelligent walking aid called "iWalker" is going to be developed in the context of the EU-subsidised project "SHARE-it". It will help elderly people to achieve safe and easier mobility in daily life. iWalker will bring with it many advantages, such as avoidance of falls due to obstacles.

Ulises Cortés is a professor and researcher at the Polytechnic University of Catalonia (UPC) and a member of the board of the European Coordinating Committee for Artificial Intelligence (ECCAI).

Time: Wednesday, 1 July 2009, 4.30 pm

Human-Robotic Exploration of Mars: Spirit, Opportunity, and Phoenix Lander

Dr. Ashitey Trebi-Ollenu, NASA Jet Propulsion Laboratory,
California Institute of Technology, USA

For more than five years now, the two robots Spirit and Opportunity have been reconnoitring the surface of Mars. In fact, it was predicted that they would only have a service life of 90 days. The Phoenix Mars lander was also built for only 90 days service life, but it managed 151 days. Some of the questions the Mars robots were meant to solve: Was there ever water on the Red Planet? Were there ever conditions conducive to life there? The talk will give an up-to-date summary of the Mars missions and a look at technologies which will be necessary in the future.

Ashitey Trebi-Ollenu is senior robotics engineer in the NASA Jet Propulsion Laboratory and has worked on a variety of NASA planet reconnoitring missions at a high level.

Time: Wednesday, 1 July 2009, 10.30 pm

Robot Ecology for an Ageing Society

Prof. Silvia Coradeschi, Academy of Science and Technology, Örebro University, Sweden

Robots which help elderly and physically challenged persons in the household and in daily life – what sounds so sensible and to some extent feasible might not necessarily find acceptance among potential users. The talk will discuss how realistic domestic robots really are, and what a multicultural evaluation of elderly people and robotic systems reveals.

Silvia Coradeschi is professor of information technology at Örebro University, Sweden. She is a founding member of the RoboCup Federation.

Time: Thursday, 2 July 2009, 4.30 pm

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Being There

Prof. Robin Roberson Murphy, Texas A&M University, USA

Hurricane Katrina, 9/11 or the collapse of the Cologne Archives: the application possibilities of rescue robots are obvious. Hardware and software have to work together with real rescue teams in difficult conditions to be able to produce something really special.

Robin Roberson Murphy leads the Center for Robot-Assisted Search and Rescue at Texas A&M University and was responsible for rescue robot missions in disasters, such as 9/11 and Katrina.

Time: Friday, 3 July 2009, 4.30 pm

Reliable Life-long Navigation for Mobile Robots

Prof. Wolfram Burgard, University of Freiburg, Germany

Despite the giant leaps in robotics in the last few years, the application of completely autonomous robots in the real world has not yet been achieved. The talk describes state-of-the-art technologies in robotic navigation, and potential and open research questions which must be answered to enable a real, long-term deployment of completely autonomous robots in complex and dynamic real-world scenarios.

Wolfram Burgard heads the Laboratory for Autonomous Intelligent Systems at the University of Freiburg.

Time: Saturday, 5 July 2009, 3.30 pm

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