Workshop

New Bodies for Cognitive Humanoids

October 26th, 2011, Bled, Slovenia

Tamim Asfour
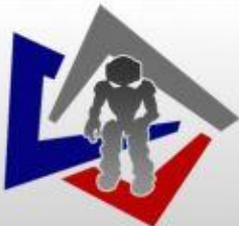
Objectives

- How the body morphology must support processes and representations for emergence of cognitive capabilities?

- Topics related to novel design methodologies of humanoids robots
  - Body morphology
  - Mechatronics and Biomechanics
  - Actuation and compliance
  - Artificial skins
  - Soft materials
  - New computing paradigms
  - Energy and power management

Organizers

- Tamim Asfour, Karlsruhe Institute of Technology (KIT), Germany
- Rüdiger Dillmann, Karlsruhe Institute of Technology (KIT), Germany
- Ales Ude, Jozef Stefan Institute, Ljubljana, Slovenia
- Giorgio Metta, Italian Institute of Technology, Italy
- Giulio Sandini, Italian Institute of Technology, Italy
- Gordon Cheng, Technical University Munich, Germany

Sponsor

- 2nd European Network for the Advancement of Artificial Cognitive Systems, Interaction and Robotics

Program (I)

9:00   **Tamim Asfour, Karlsruhe Institute of Technology, Germany**
Towards High-Performance 24/7 Humanoids

9:30   **Oskar von Stryk, TU Darmstadt, Germany**
Elastic Bodyware for Bio-Inspired Humanoids

10:00   **Yuto Nakanishi, University of Tokyo, Japan**
Challenge to Design and Control of more Humanlike Tendon-Driven Musculoskeletal Humaonids

10:30   **Coffee Break**

Program (II)

11:00 **Yoshihiko Nakamura, University of Tokyo, Japan**
On the Requirements of New Actuator for the New Body of Humanoids

11:30 **Alin Albu-Schaeffer, DLR, Germany**
Design and Control of DLR Compliant Robots

12:00 **Nikos Tsagarakis, Italian Institute of Technology, Italy**
Developing Actuators with Rich Motor Properties for Emerging Humanoids

12:30 **Lunch**

Program (III)

13:30   **Kenji Kaneko and Kazuhito Yokoi, AIST, Japan**
Design of Cybernetic Human HRP-4C

14:00   **Tomoaki Yoshikai, The University of Tokyo**
Humanoids with Whole-Body Soft Sensor Flesh for Close Interaction with
Humans, Objects, and Environments

14:30   **Giorgio Metta, Italian Institute of Technology, Italy**
Advances in the Design of the iCub Humanoid Robot: Force Control and
Tactile Sensing

15:00   **Coffee Break**

Program (IV)

15:30	**Erhan Oztop, Ozyegin University, Istanbul, Turkey** Projecting from Human-in-the-Loop Control to Cognitive Robot Design
16:00	**James Kuffner; Google & CMU** New Cloud-Based Computational Architectures for Humanoids
16:30	**Panel discussion**
17:00	**End**

17:20 - 17:30	Conference Opening
17:30 - 18:30	Plenary Talk I, Bruno Maisonnier: Towards applications for humanoid robots
19:30 - 21:30	Welcome Reception

Slides will be available at the webpage

http://i61www.ira.uka.de/users/asfour/Workshop-Humanoids2011/Humanoids2011.html