Workshop

Object Action Complexes: Representations for Grounding Perception by Action and Grounding of Language by Interaction

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Representations

• How to build representations of space and motion, objects (things that move) and actions, properties and affordances, goals, plans, beliefs and desires, values, communication, embodiment, models of other minds, ...?

• How to bridge the gap between sub-symbolic low-level robotics and vision domain and the high-level symbolic AI domain?

• How to coordinate and align multiple representations?

• How to develop higher-level representations suitable for faster learning?
Session I

• **Bootstrapping Object and Grasping Knowledge with Object Action Complexes**
  Norbert Krüger, University of Southern Denmark
  Justus Piater, University Liege

• **Grounding Language in Object-Centered Affordance**
  Mark Steedman
  University of Edinburgh

• **Affordances: The adventures of an elephant in the land of autonomous robots**
  Erol Sahin
  Middle East Technical University - Ankara, Turkey
Session II

• **Model free 3D manipulation-recognition and object-categorization in real time for imitation learning in robots**
  Florentin Wörgötter
  BCCN, Göttingen, Germany

• **Neurocomputational models for concept and language grounding**
  Tom Ziemke
  University of Skövde, Sweden

• **Action-related Places - Bridging the Gap between Symbolic and Subsymbolic Representation in Mobile Robot Manipulation**
  Andreas Fedrizzi, Freek Stulp, Michael Beetz
  Technical University Munich, Germany
Session III

- **TBD**
  Christian Goerick
  Honda Research Institute Europe GmbH

- **Grounded humanoid representations: objects, actions and movements**
  Gordon Cheng
  Technical University Munich, Germany

- **Motor invariants in action recognition**
  Giorgio Metta
  Italian Institute of Technology, Italy

- **Towards Action Representation based on Acoustic Packages**
  Britta Wrede, Lars Schillingmann, Katharina J. Rohlfing
  CoR-Lab, Bielefeld University, Germany
Session IV

• **Exploration and Imitation for the Acquisition of Object-Action Complexes**
  Tamim Asfour, Karlsruhe Institute of technology, Germany
  Ales Ude, Jozef Stefan Institute, Slovenia

• **On Learning and Using Affordances with Humanoid Robots**
  José Santos-Victor
  Instituto Superior Técnico, Lisbon, Portugal

• **Learning action primitives in the object-action space**
  Volker Krüger, Aalborg University, Denmark
  Danica Kragic, KTH, Sweden

• **Psychology of the OAC**
  Saskia van Dantzig, Pascal Haazebroek and Bernhard Hommel
  Leiden University, Netherlands
Workshop material

• Abstracts and presentations will be available on the workshop homepage

• Selected papers for a special journal issue
  – Robotics and Autonomous Systems (RAS)
  – International Journal on Humanoid Robots