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Workshop

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

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# Representations

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- 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

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- [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

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- [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

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- [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

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- [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

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- 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