

Deutsche Gesellschaft für Robotik (DGR)

## DGR Days 2016

---

**29.-30. Juni, 2016, Leipzig, Vortragsraum 10, Ebene +2**

Congress Center Leipzig

<http://www.ccl-leipzig.de/ccl/lage-anfahrt/>

### Duration of the presentations

Keynotes	30 minutes (25 min talk + 5min Q&A)
Oral presentations	10 minutes (7min talk + 3min Q&A)
Interactive presentations	3min teaser + 30min discussion during following break

### Programm

#### Wednesday, June 29

Time	Session
9:00	Opening Tamim Asfour, Karsten Berns, Jessica Burgner, Oskar von Stryk
<b>9:05</b>	<b>Keynote: Offroad Robotics</b> <b>Karsten Berns</b>
9:35	Robust Deep Scene Understanding of Unstructured Environments <i>Abhinav Valada and Wolfram Burgard</i>
9:45	Auto-tuning of PID Controllers for Robotic Manipulators Using Particle Swarm Optimization Method <i>Ahmed Zidan, Jens Kotlarski and Tobias Ortmaier</i>
9:55	Formal proofing and monitoring of surgical workflows <i>Luzie Schreiter</i>
10:05	FPGA-aided, behaviour based control of a robot manipulator <i>Alexander Köpper and Karsten Berns</i>
10:08	Autonomous Robotics: Application on Legged and Agricultural Robots <i>Arne-Christoph Hildebrandt, Daniel Wahrmann, Felix Sygulla, Robert Wittmann, Constantin von Deimling and Daniel Rixen</i>
10:11	Lidar-Based Localization of an Agricultural Robot in Crop Fields <i>Alexander Schaefer, Michael Ruhnke and Wolfram Burgard</i>
10:14	Automatic Channel Selection in Neural Microprobes <i>Camilo Gordillo and Wolfram Burgard</i>

10:17	A Bio-Inspired Distributed Balancing Controller for Torque Controlled Humanoid Robots <i>Lukas Kaul and Tamim Asfour</i>
10:20	Discussion
<b>10:30</b>	<b>Coffee Break / Poster Session</b>
<b>11:00</b>	<b>Keynote: How to learn and interact ? An integrated perspective on Cognitive Robotics Systems Engineering</b> <b>Jochen Steil</b>
11:30	New Perception Approaches for Mobile Robots in Low Visibility Environments <i>Paul Fritsche, Björn Zeise, Patrick Hemme and Bernardo Wagner</i>
11:40	Learning Task-Priorities based on a Mixture of Torque Controllers <i>Niels Dehio and Jochen Steil</i>
11:50	Incremental Bootstrapping of Parametrized Skill Memories <i>Jeffrey Queißer and Jochen J. Steil</i>
12:00	Perception of Affordances for Whole-Body Loco-Manipulation <i>Peter Kaiser, Markus Grotz, Eren Aksoy and Tamim Asfour</i>
12:10	Analytical Forward and Inverse Kinematics of a Multi-Flexible-Link Robot Arm under Gravity <i>Freia Irina Mues, Myrel Alsayegh, Jörn Malzahn and Torsten Bertram</i>
12:20	Discussion
<b>12:30</b>	<b>Lunch</b>
<b>13:30</b>	<b>Keynote: The Story of FRANKA: From Scientific Challenges to the Professional Robot for Everyone</b> <b>Sami Haddin</b>
14:00	Indoor Scene Recognition by 3D Object Search for Robot Programming by Demonstration <i>Pascal Meißner and Rüdiger Dillmann</i>
14:10	Haptic learning and haptic search for complex shapes <i>Alexandra Moringen and Helge Ritter</i>
14:20	Spatial investigation of biologic joints by robotic arms <i>Constantin von Deimling, Peter Föhr, Andreas Obermeier, Arne-Christoph Hildebrandt, Christoph Schütz, Felix Sygulla, Oliver Hofmann, Daniel Wahrmann, Robert Wittmann, Daniel Rixen and Rainer Burgkart</i>
14:30	Using Human Demonstrations and Trajectory Optimization for Generalizable Human-like Robot Motions <i>Dorothea Koert, Guilherme Maeda, Rudolf Lioutikov, Gerhard Neumann and Jan Peters</i>
14:40	Model Predictive Control for Learning from Demonstration <i>Myrel Alsayegh, Frank Hoffmann and Torsten Bertram</i>
14:50	A multimodal capacitive sensor for Grasping and dexterous manipulation <i>Hosam Alagi</i>

15:00	Decentralized data-driven control of cooperating sensor-equipped aerial vehicles <i>Juliane Euler and Oskar von Stryk</i>
15:03	Combining Gaze Stabilization Reflexes for Humanoid Robots <i>Markus Grotz, David Sippel and Tamim Asfour</i>
15:06	Single Camera Based Multiple Pedestrian Tracking for Resource-Limited Hardware Systems <i>Tanittha Sutjaritvorakul, Songlin Piao and Karsten Berns</i>
15:09	Whole-Body Sensory Concept for Compliant Mobile Robots <i>Marina Kollmitz, Andreas Wachaja, Tobias Schubert and Wolfram Burgard</i>
15:12	System identification of a feed-forward controlled robotic leg to mimic human running gaits <i>Christian Schumacher, Heiko Schlarb and Andre Seyfarth</i>
15:15	Discussion
<b>15:30</b>	<b>Coffee Break / Poster Session</b>
<b>16:00</b>	<b>Keynote: Action in Robot Perception</b> <b><i>Oliver Brock</i></b>
16:30	Interactive Perception for Autonomous Robotic Manipulation <i>Roberto Martín-Martín and Oliver Brock</i>
16:40	Interlocking Perception-Action Loops at Multiple Time Scales - a System Architecture Proposal for Interactive Perception <i>Jeannette Bohg</i>
16:50	Learning Convolutional Filters for Tactile Manipulation <i>Martin Meier, Robert Haschke and Helge J. Ritter</i>
17:00	Learning 6D Object Pose Estimation and Tracking <i>Frank Michel</i>
17:10	Integrating vision and physical interaction for object segmentation and grasping <i>David Schiebener</i>
<b>18:00</b>	<b>RoboCup 2016 Opening Ceremony</b>
<b>19:00</b>	<b>Dinner</b>

## Thursday, June 30

Uhrzeit	Session
9:00	<b>Keynote: Robot competitions and benchmarking with a benefit for the industry</b> <i>Rainer Bischoff</i>
9:30	Cognition-Guided Surgery - Context-aware assistance in the operating room of the future <i>Stefanie Speidel, Sebastian Bodenstedt, Andreas Bihlmaier, Darko Katic, Jessica Hutzl, Martin Wagner, Hannes Kenngott, Beat Müller-Stich, Heinz Wörn and Rüdiger Dillmann</i>
9:40	Development of Compliant Hyper-redundant Mechanisms for Robotic Catheters and Analysis of Controllability <i>Pedro Rodriguez Nasdar, Pinar Boyraz, Tobias Ortmaier and Annika Raatz</i>
9:50	METABot-Magnetic Extensible Tendon Actuated Continuum Robot <i>Ernar Amanov and Jessica Burgner-Kahrs</i>
10:00	Real-time 4D Object Modelling for Adaptive Manipulation <i>Seongyong Koo, Sven Behnke</i>
10:10	Rapid Motion Planning for Intracerebral Hemorrhage Evacuation using a Tubular Aspiration Robot <i>Josephine Granna, Yannick Vornehm, Carolin Fellmann and Jessica Burgner-Kahrs</i>
10:13	Optimal Control of Lifting Motions for Spinal Exoskeleton Design <i>Paul Manns and Katja Mombaur</i>
10:16	Robot Learns to Use Tactile Tool Interacting with Unknown Object <i>Qiang Li, Robert Haschke and Helge Ritter</i>
10:19	Decentralized Dynamic Data-Driven Monitoring and Estimation of Contaminant Plumes <i>Tobias Ritter, Stefan Ulbrich and Oskar von Stryk</i>
10:22	Target Prediction in an Immersive Pick-and-Place Scenario <i>Dennis Krupke, Frank Steinicke and Jianwei Zhang</i>
10:25	Probabilistic Camera Localization from Images using Text Spotting <i>Noha Radwan, Wolfram Burgard, Gian Diego Tipaldi and Luciano Spinello</i>
10:28	Discussion
10:30	<b>Coffee Break / Poster Session</b>
11:00	<b>Keynote: AI-enabled Robotics --- between cognitive robotics, deep learning, data analytics, and open research</b> <i>Michael Beetz</i>
11:30	(Inverse) Optimal Control for Matching Higher-Order Moments <i>Oleg Arenz, Hany Abdulsamad and Gerhard Neumann</i>
11:40	Motoric activation of persons with early stage dementia with a robotic system <i>Denis Štogl</i>

11:50	Proximity Sensors for Safe Human Robot Interaction <i>Yitao Ding</i>
12:00	Autonomous Transparent Object Reconstruction <i>Sven Albrecht and Michael Görner</i>
12:10	Adaptive Sensor Fusion for RGB-D Object Detection <i>Oier Andreas Mees, Andreas Eitel and Wolfram Burgard</i>
12:20	Discussion
<b>12:30</b>	<b>Lunch</b>
<b>13:30</b>	<b>Guided Tour RoboCup 2016</b>
<b>15:00</b>	<b>End DGR-Days 2016</b>

## Further information

Webpage DGR Days 2016: <https://h2t-projects.webarchiv.kit.edu/Projects/dgr2016/>

## Contact

Prof. Dr. Tamim Asfour

Deutsche Gesellschaft für Robotik

c/o

Karlsruhe Institute of Technology (KIT)

Institute for Anthropomatics and Robotics (IAR)

High Performance Humanoid Technologies (H2T)

Adenauerring 2, Bldg. 50.20, Room 017

D-76131 Karlsruhe, Germany

Phone: +49 721 608 47379

Email: [asfour@kit.edu](mailto:asfour@kit.edu)

<http://www.humanoids.kit.edu>

<http://h2t.anthropomatik.kit.edu>