



PROGRAM

for the conference of



ROBOTIK 2012

7th German Conference
on Robotics

21 – 22 May 2012

International Congress Center Munich (ICM)

in conjunction with



22 – 25 May 2012

Welcome of the Chairman of ROBOTIK 2012



Robotik 2012 is the 7th in a series of German robotics conferences. It is organized by the German Association of Robotics (DGR), which is an umbrella organization for the coordination of scientific and technological robotics activities in Germany. For the 5th time the conference is taking place in Munich in conjunction with AUTOMATICA, the leading trade fair for automation and mechatronics.

Next to Japan and the USA Germany is one of the leading countries in the field of robotics. This is also reflected in the range of topics covered by the submitted contributions. A special aspect of the Robotik conferences is that participants from academia meet researchers and developers from the industry. Therefore, Robotik 2012 is a forum for exchanging ideas on current topics and discussing the latest trends in the field of robotics.

Robotik 2012 attracted great interest in both the national and the international community. Many sophisticated papers have been submitted to the conference. After a careful review process, carried out by international experts in this area, 75 papers were selected for oral presentation. Furthermore, 23 posters are presented during the venue of this conference. The international interest also shows in the number of represented countries. In total researchers from 18 countries present their research work.

I wish the participants an interesting and pleasant conference.

*Prof. Dr. Karsten Berns, Chair Robotik 2012
On behalf of the German Association of Robotics (DGR)*





Organization

Initiators / Stakeholders

- DGR – German Association of Robotics
- Messe München GmbH

Event Management

- ITG – The Information Technology Society (VDE)

Event Support & Local Host

- Messe München GmbH

Scientific Management & Support

- DGR – German Association of Robotics
- Fraunhofer IPA
- University of Kaiserslautern

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- Oskar von Stryk, Technische Universität Darmstadt, Germany
- Bernardo Wagner, Leibniz Universität Hannover, Germany
- Friedrich Wahl, Technische Universität Braunschweig, Germany
- Heinz Wörn, Karlsruhe Institute of Technology (KIT), Germany
- Jianwei Zhang, Universität Hamburg, Germany



Invited Talks

Monday, 21 May 2012 12:00pm – 12:45pm

Herman Bruyninckx



„Software frameworks for complex robot systems”

University of Leuven, Belgium

Tuesday, 22 May 2012 1:15pm – 2:00pm

Uwe Siewert

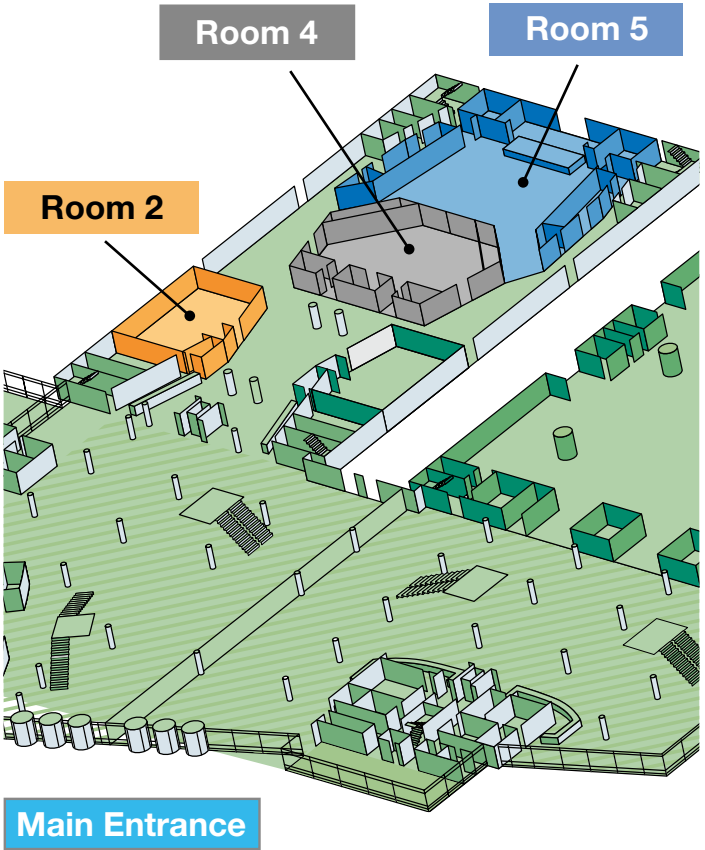


“Chances for Automation based on Cross-Industry Technology Transfer – Example of Automotive and Aircraft Industries”

Dürr Systems GmbH, Germany

Location ICM

Farbcode



Technical Program

Location/Farbcode

Room 2

Room 4

Room 5

Monday, 21 May 2012

10:00am – 11:30am

Humanoid Robotics

Room 2

Chair: G. Cheng (Technische Universität München, Germany)

10:00 Graph-Based Action Models for Human Motion Classification

F. Endres, J. Hess, W. Burgard, (University of Freiburg, Germany)

10:20 Hardware Design and Mathematical Modeling for an Artificial Pneumatic Spine for a Biped Humanoid Robot

Ch. Bauer, M. Engelmann, I. Gaiser, R. Mikut, St. Schulz, Th. Stein, A. Fischer (Karlsruhe Institute of Technology (KIT), Germany)

10:40 A Dynamical Systems Approach to Adaptive Sequencing of Movement Primitives

T. Luksch (University of Kaiserslautern, Germany),
M. Gienger, M. Mühlig, T. Yoshiike (Honda Research Institute Europe, Germany)

11:00 Playing Tangram with a Humanoid Robot

J. Hirth, N. Schmitz, K. Berns (University of Kaiserslautern, Germany)

Robotics in New Markets & Applications

Room 4

Chair: F. Kirchner (DFKI, Bremen, Germany)

10:00 Robotic system for mapping 3D in-wall information for craftsmen

J. Vorndamme (Leibniz Universität Hannover, Germany)

St. Petereit (Robert Bosch GmbH, Germany)

B. Pitzer, Ph. Roan (Robert Bosch LLC, USA)

T. Lilge (Leibniz Universität Hannover, Germany)

A. Albert (Robert Bosch GmbH, Germany)

10:20 Integrated Vision/Force Robot System for Shelving and Rearranging of Imprecisely Placed Objects

M. Bdiwi (Chemnitz University of Technology, Germany)

10:40 An Autonomous Flying Robot for Network Robotics

Ch. Blum, V. Hafner (Humboldt University Berlin, Germany)

11:00 Piezo-driven Micro Robots for Different Environments: Prototypes and Experiments

F. Becker (Ilmenau University of Technology, Germany)

V. Minchenya (Belarusian National Technical University, Minsk, Belarus)

K. Zimmermann (Ilmenau University of Technology, Germany)

T. Volkova (Lomonosov Moscow State University, Moscow, Russia)

Safety Requirements

Room 5

Chair: T. Lüth (Technische Universität München, Germany)

10:00 Development of validation methods for the safety of mobile service robots with manipulator

Th. Jacobs, U. Reiser, M. Hägele, A. Verl
(Fraunhofer IPA, Germany)



10:20 Safety of Industrial Robots: From Conventional to Collaborative Applications

J. Fryman (Robotic Industries Association, Ann Arbor MI, USA)

B. Matthias (ABB AG Corporate Research, Germany)

10:40 Safety Challenges of Transferable Robotic Systems

T. Salm, O. Väättäinen (VTT, Technical Research Center of Finland, Finland)

11:00 Sensor- and Plausibility-based Surveillance of Human/Robot-Workspaces

M. Hänel, M. Fischer, St. Kuhn, D. Henrich (University of Bayreuth, Germany)

11:30am – 12:00pm

Coffee Break

12:00pm – 12:45pm

Invited Talk I

Room 5

Software frameworks for complex robot systems

Herman Bruyninckx (University of Leuven, Belgium)

12:45pm – 1:45pm

Lunch Break

1:45pm – 3:15pm

Motion & Planning

Room 2

*Chair: G. Lawitzky (Siemens AG, Munich, Germany)***1:45 Comparison of sampling based motion planning algorithms specialized for robot manipulators***Ch. Fragkopoulos, K. Abbas, A. Eldeep, A. Graeser (University of Bremen, Germany)***2:05 Trajectory modification considering dynamic constraints of autonomous robots***Ch. Rösmann (TU Dortmund University, Germany)**Th. Wösch, W. Feiten (Siemens Corporate Technology, Germany)**F. Hoffmann, T. Bertram (TU Dortmund University, Germany)***2:25 Locomotion through Reconfiguration based on Motor Primitives for Roombots Self-Reconfigurable Modular Robots***St. Bonardi (Biorobotics Laboratory & EPFL, Switzerland)**R. Moeckel, A. Sproewitz, M. Vespignani, A. Jan Ijspeert (EPFL, Switzerland)***2:45 Generating Behaviour Networks from Finite-State Machines***Ch. Armburst, D. Schmidt, K. Berns (University of Kaiserslautern, Germany)*

Object Detection & Collision Avoidance

Room 4

*Chair: U. Frese (DFKI, Germany)***1:45 3D-Sensor Based Dynamic Path Planning and Obstacle Avoidance for Industrial Manipulators***F. Leutert (University of Würzburg, Germany)**Ch. Freier (Volkswagen AG, Germany)**K. Schilling (University of Würzburg, Germany)*

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- 2:05 Fast Vision-based Grasp and Delivery Planning for unknown Objects**
J. Baumgartl, D. Henrich (University of Bayreuth, Germany)
- 2:25 Object Pose Detection in Industrial Environment**
M. Palzkill, A. Verl (Fraunhofer IPA, Germany)
- 2:45 A New Library for Real-time Continuous Collision Detection**
H. Täubig, U. Frese (DFKI, Germany)

Domestic Robots

Room 5

Chair: E. Prassler (Bonn-Rhine-Sieg University of Applied Sciences, Germany)


- 1:45 Safety Properties and Collision Behavior of Robotic Arms with Elastic Tendon Actuation**
Th. Lens, O. von Stryk (Technische Universität Darmstadt, Germany)
- 2:05 An Aml Environment Implementation: Embedding TurtleBot into a novel Robotic Service Wall**
Ch. Georgoulas, Th. Linner, A. Kasatkin, Th. Bock (Technische Universität München, Germany)
- 2:25 Visually and Force Controlled Opening and Closing of Doors by Means of a Mobile Robot Arm**
G. Milighetti, E. Hoffmann, H.-B. Kuntze (Fraunhofer IOSB, Germany)
- 2:45 A Visual Dirt Detection System for Mobile Service Robots**
R. Bormann, J. Fischer, G. Arbeiter, A. Verl (Fraunhofer IPA, Germany)

3:15pm – 4:15pm

Poster Session

- P1 Design of wheel modules for non-holonomic, omnidirectional mobile robots in context of the emerging control problems**
Th. Jacobs, Ch. Connette, M. Hägele, A. Verl
(Fraunhofer IPA, Germany)
- P2 Unified Closed Form Inverse Kinematics for the KUKA youBot**
S. Sharma (Bonn-Rhine-Sieg University of Applied Sciences, Germany)
Ch. Scheurer (KUKA Laboratories GmbH, Germany)
R. Bischoff (KUKA Robotics Corporation, Augsburg, Germany)
G. Kraetzschmar (Bonn-Rhine-Sieg University of Applied Sciences, Germany)
- P3 Uniform Cellular Design of Artificial Robotic Skin**
Ph. Mittendorfer, G. Cheng (Technische Universität München, Germany)
- P4 An approach to locomotion systems based on 3D tensegrity structures with a minimal number of struts**
V. Böhm, A. Jentzsch, T. Kaufhold, F. Schneider, F. Becker, K. Zimmermann (Ilmenau University of Technology, Germany)
- P5 Development of Position Monitoring system for studying performance of wind tracking algorithms**
A. Jahangir Moshayedi, D. Gharpure (University of Pune, India)
- P6 Operating Unknown Constrained Mechanisms with Compliant Robots**
E. Lutscher, G. Cheng (Technische Universität München, Germany)
- P7 Playing with allometry: combination of macroscopic engineering with microscopic biomimetics allows realization of new robot functions in meso dimension**
M. Fremerey, H. Witte (Ilmenau University of Technology, Germany)



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- P8 Automatic Generation of Stable Poses and Drop Regions**
J. Jørgensen, L.-P. Ellekilde, H. Petersen (University of Southern Denmark, Denmark)
- P9 Management and Manipulation of Modular and Reconfigurable Satellites**
J. Oberländer, K. Uhl, L. Pfozner, M. Göller, A. Rönnau (FZI Forschungszentrum Informatik, Germany)
R. Dillmann (Karlsruhe Institute of Technology (KIT), Germany)
- P10 Visibility-Based Path Planning for Autonomous Underwater Vehicle**
O. Gal (Technion Israel, Israel)
- P11 Comparison of Localization Algorithms for AGVs in Industrial Environments**
Ch. Kirsch, F. Künemund, D. Heß, Ch. Röhrig (Dortmund University of Applied Sciences and Arts, Germany)
- P12 Investigation on a Planar Cable-Driven Parallel Robot**
W. Kraus, V. Schmidt, A. Pott, A. Verl (Fraunhofer IPA, Germany)
- P13 Rule based Intention Generalization through Human-Robot Interaction**
M. Awais, D. Henrich (University of Bayreuth, Germany)
- P14 Gripping Point Calculation and Collision Avoidance in a Bin-Picking application**
F. Spenrath, A. Spiller, A. Verl (Fraunhofer IPA, Germany)
- P15 Automatic Path and Trajectory Planning for Robotic Spray Painting**
A. Gasparetto (University of Udine, Italy)
R. Vidoni (Free University of Bozen-Bolzano, Italy)
D. Pillan, E. Saccavini (CMA Robotics, Italy)
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- P16** **New developments and application spectrum for robotics in laser material processing – Challenges and opportunities for the flexible use of robot systems for laser welding**
E. Friedel, N. Wagner (TRUMPF Laser- und Systemtechnik GmbH, Germany)
- P17** **Autonomous Foods Handling by Chopsticks for Meal Assistant Robot**
A. Yamazaki, R. Masuda (Tokai University, Japan)
- P18** **Application of Hybrid A* to an Autonomous Mobile Robot for Path Planning in Unstructured Outdoor Environments**
J. Petereit, Th. Emter, Ch. Walter Frey
(Fraunhofer IOSB, Germany)
Th. Kopfstedt, A. Beutel (Diehl BGT Defence GmbH & Co. KG, Germany)
- P19** **A mobile robot platform for socially assistive home-care applications**
M. Merten (Metralabs GmbH, Germany)
H.-M. Gross (Ilmenau University of Technology, Germany)
- P20** **Simultaneous Localization and Mapping with the Kinect sensor**
Th. Emter (Fraunhofer IOSB, Germany)
A. Stein (Robert Bosch GmbH, Germany)
- P21** **An Easy to Use Framework for Educational Robots**
R. Maas, E. Maehle (University of Lübeck, Germany)
- P22** **Conceptual Design of a Dynamic Risk-Assessment Server for Autonomous Robots**
Ph. Ertle (University Duisburg-Essen, Germany)
M. Tokic, T. Bystricky, M. Ebel, H. Voos
(University of Applied Sciences Ravensburg-Weingarten, Germany)
D. Söffker (University Duisburg-Essen, Germany)



P23 Development of a Hybrid Robot Assistance System for Welding of Assemblies - Ensuring 24 Human Safety with Offline Simulation and Real-time Workspace Surveillance

B. Kuhlenkötter (TU Dortmund University, Germany)

4:15pm – 6:15pm

Perception I

Room 2

Chair: R. Dillmann (Karlsruhe Institute of Technology (KIT), Germany)

4:15 Robust Real-Time Registration of RGB-D Images using Multi-Resolution Surfel Representations

J. Stückler, S. Behnke (University of Bonn, Germany)

4:35 Coarse Geometry acquisition of welding parts using a novel cheap depth sensor

Th. Gecks (University of Bayreuth, Germany)

Ch. Müller (Blackbird Robotics GmbH, Germany)

D. Henrich (University of Bayreuth, Germany)

W. Vogl (Technical University Munich, Germany)

4:55 Rapid Detection of Fast Objects in Highly Dynamic Outdoor Environments using Cost-Efficient Sensors

Ch. Connette, J. Fischer, B. Maidel, F. Mirus, S. Nilsson, K. Pfeiffer, A. Verl (Fraunhofer IPA, Germany)

A. Durbec, B. Ewert, T. Haar (Valeo Schalter und Sensoren GmbH, Germany)

D. Grüdl (Valeo Schalter und Sensoren GmbH, Germany)

- 5:15 Efficient Monitoring of Process Plants by Telepresence and Attention Guidance**
Ch. Connette, G. Arbeiter, F. Meßmer, M. Hägele, A. Verl (Fraunhofer IPA, Germany)
S. Notheis, M. Mende, B. Hein, H. Wörn (Karlsruhe Institute of Technology (KIT), Germany)
- 5:35 MPG - Fast Forward Reasoning on 6 DOF Pose Uncertainty**
M. Lang (Technische Universität München, Germany)
W. Feiten (Siemens Corporate Technology, Germany)

Industrial Applications

Room 4

Chair: B. Kuhlenkötter (TU Dortmund University, Germany)

- 4:15 Enabling robots in small-part assembly lines: The „ROSETTA approach“ – an industrial perspective**
R. Patel, M. Hedelind, P. Lozan-Villegas
 (ABB AG, Sweden)
- 4:35 Advanced methods for small batch robotic machining of hard materials**
D. Surdilovic, G. Schreck (Fraunhofer IPK, Germany)
- 4:55 Optimised Pattern Recognition For Robotic Weldment Geometry Measuring**
G. Hoffmeier, M. Plyusnina, B. Kuhlenkötter
 (TU Dortmund University, Germany)
J. Bickendorf (Autocam Informationstechnik GmbH, Germany)
- 5:15 A Flexible Haptic Test Bed**
M. Bartelt, F. Domrös, B. Kuhlenkötter
 (TU Dortmund University, Germany)
- 5:35 Auto-Calibration Method for Overconstrained Cable-Driven Parallel Robots**
Ph. Miermeister, A. Pott, A. Verl
 (Fraunhofer IPA, Germany)



Outdoor Robotics

Room 5

Chair: K. Berns (University of Kaiserslautern, Germany)

4:15 Outdoor RGB-D SLAM Performance in Slow Mine Detection

S. Abbas, A. Muhammad (LUMS School of Science & Engineering, Pakistan)

4:35 Visual Servoing of a Sensor Arm for Mine Detection Robot Marwa

T. Manzoor, A. Munawar, A. Muhammad (LUMS School of Science & Engineering, Pakistan)

4:55 Optical Position Stabilization of an UAV for Autonomous Landing

M. Ax, St. Thamke, L. Kuhnert, J. Schlemper, K.-D. Kuhnert (University of Siegen, Germany)

5:15 MONSUN II: A small and inexpensive AUV for underwater swarms

Ch. Osterloh, Th. Pionteck, E. Maehle (University of Lübeck, Germany)

5:35 Advanced Mobile Robot Engineering with Virtual Testbeds

J. Rossmann, M. Schluse, B. Sondermann, M. Emde, M. Rast (RWTH Aachen University, Germany)

6:15pm

Get Together

Tuesday, 22 May 2012**8:45am – 10:15am****Perception II****Room 2**

Chair: P. Plöger (Bonn-Rhine-Sieg University of Applied Sciences, Germany)

8:45 A Real-Time Optical Sensor Simulation Framework for Development and Testing of Industrial and Mobile Robot Applications

J. Rossmann, N. Hempe, M. Emde, Th. Steil
(RWTH Aachen University, Germany)

9:05 Implementation of the Hungarian Method for object tracking on a camera monitored transportation system

F. Lütteke, Xu Zhang (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)

9:25 Extracting Semantics from Occupancy Grids

Z. Liu, D. Chen (Technische Universität München, Germany)

G. von Wichert (Siemens AG, Germany)

9:45 Optimized Mobile Indoor Robot Navigation through Probabilistic Tracking of People in a Wireless Sensor Network

M. Arndt, K. Berns (University of Kaiserslautern, Germany)

Trajectory Generation & Mobile Robotics**Room 4**

Chair: M. Hägele (Fraunhofer IPA, Germany)

8:45 Robots assisting in the packaging industry


F. Wallhoff (Jade University of Applied Sciences, Germany)

J. Blume, A. Bannat, W. Rösel, C. Zwicker, B. Appleton
(Technische Universität München, Germany)

A. Pichler (Profactor GmbH, Austria)

P. Ferrara (Ferrobotics, Germany)

R. Behrndt (MRK Systeme, Germany)

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- 9:05 Trajectory Description Conception for Industrial robots**
S. Alatarsev, F. Ortmeier (Otto-von-Guericke University of Magdeburg, Germany)
M. Guedemann (INRIA Rhône-Alpes, France)
- 9:25 AMADEUS - A robotic multipurpose solution for intralogistics**
A. Verl, M. Naumann, F. Meßmer, L. Halt, Th. Wochinger, M. Hermann (Fraunhofer IPA, Germany)
- 9:45 Fast and Accurate Trajectory Generation for Non-Circular Omnidirectional Robots in Industrial Applications**
F. Künemund, Ch. Kirsch, D. Heß, Ch. Röhrig (Dortmund University of Applied Sciences and Arts, Germany)

Medical & Health

Room 5

Chair: T. Ortmaier (Leibniz Universität Hannover, Germany)

- 8:45 A Narrow Passage Assistance Functions on a Mobility Scooter for Elderly People**
D. Eck, Th. Heim, R. Hess, K. Schilling (University of Würzburg, Germany)
- 9:05 Book Detection and Grasping in Library Scenario**
St. Heyer, B. Enjarini, Ch. Fragkopoulos, A. Graeser (University of Bremen, Germany)
- 9:25 A mobile robot for rehabilitation of free walking**
T. Fröhlich (Fraunhofer IPA, Germany)
- 9:45 Micro-Macro Telemanipulator for Middle-Ear Microsurgery**
K. Entsfellner (Technische Universität München, Germany)
G. Strauss, Th. Berger, A. Dietz (Universitätsklinik Leipzig, Germany)
T. Lüth (Technische Universität München, Germany)

10:15am – 10:45am

Coffee Break

10:45am – 12:15pm

Control 1

Room 2

Chair: H.-B. Kuntze (Fraunhofer IOSB, Germany)

10:45 Position Control of Soft Robots with Rotary-Type Pneumatic Actuators

J. Taghia, A. Wilkening, O. Ivlev (University of Bremen, Germany)

11:05 Control of physical interaction tasks using pneumatic soft-robots

D. Baiden (Friedrich-Wilhelm-Bessel-Institute Research Company, Germany)

O. Ivlev (University of Bremen, Germany)

S. Bartuszi (University of Bremen, Germany)

11:25 A Multi-Link-Flexible Robot Arm Catching Thrown Balls

J. Malzahn, A. S. Phung, T. Bertram (Technische Universität Dortmund, Germany)

11:45 An Elephant's Trunk-Inspired Robotic Arm – Trajectory Determination and Control

R. Behrens, M. Poggendorf, E. Schulenburg, N. Elkmann (Fraunhofer IFF, Germany)

Programming & Architectures for Industrial Robots


Room 4

Chair: D. Kubus (Technische Universität Braunschweig, Germany)

10:45 Robot Programming for Surface Finishing based on CAD Model Including External Axes

J. Dani (SITEC Automation GmbH, Germany)

A. Winkler, J. Suchý (Chemnitz University of Technology, Germany)

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- 11:05 Programming System for Efficient Use of Industrial Robots for Deburring in SME Environments**
Th. Dietz, M. Barho, S. Oberer-Treitz, M. Drust, U. Schneider, M. Hägele (Fraunhofer IPA, Germany)
- 11:25 A Framework for a fault tolerant and learning robotic assembly system**
M. Naumann, A. Verl, F. Nägele (Fraunhofer IPA, Germany)
- 11:45 High-level integration of components into a robot cell using semantically annotated state chart descriptions**
M. Naumann, A. Verl (Fraunhofer IPA, Germany)

Navigation and Mapping

Room 5

Chair: W. Burgard (University of Freiburg, Germany)

- 10:45 A Toolkit for Automatic Generation of PolygonalMaps – Las Vegas Reconstruction**
Th. Wiemann, K. Lingemann (University of Osnabrück, Germany)
A. Nüchter (Jacobs University of Bremen, Germany)
J. Hertzberg (University of Osnabrück, Germany)
- 11:05 Ground Plan Based Exploration with a Mobile Indoor Robot**
J. Wettach, K. Berns (University of Kaiserslautern, Germany)
- 11:25 Real-Time Visual SLAM Using FastSLAM and the Microsoft Kinect Camera**
J. Hartmann, D. Forouher, M. Litza, J. H. Klüssendorf, E. Maehle (University of Lübeck, Germany)
- 11:45 Efficient Mobile Robot Navigation using 3D Surfel Grid Maps**
J. Kläb, J. Stückler, S. Behnke (University of Bonn, Germany)

12:15pm – 1:15pm

Lunch Break

1:15pm – 2:00pm

Invited Talk II

Room 5

Chances for Automation based on Cross-Industry Technology Transfer – Example of Automotive and Aircraft Industries

U. Siewert (Dürr Systems GmbH, Germany)

2:00pm – 3:30pm

Object Recognition & Grasping

Room 2

Chair: A. Knoll (Technische Universität München, Germany)

2:00 Shape-Primitive Based Object Recognition and Grasping

M. Nieuwenhuisen, J. Stückler, S. Behnke, A. Berner, R. Klein (University of Bonn, Germany)

2:20 Extraction of Solids of Revolution from Point Cloud Scenes for Grasp Planning Tasks

St. E. Navarro, H. Wörn, D. Braun, T. Klock (Karlsruhe Institute of Technology (KIT))

2:40 Rotary Surface Object Manipulation by Multifingered Robot Hand

*Q. Li, R. Haschke, H. Ritter (Bielefeld University, Germany)
B. Bolder (Honda Research Institute Europe, Germany)*

3:00 k-TR Theory for Balance of Nature and Nurture in Robotic Perception

K. Mahesh Varadarajan (Vienna University of Technology, Austria)



Control 2

Room 4

Chair: J. Suchý (Chemnitz University of Technology, Germany)

2:00 Control with a Compliant Force-Torque Sensor
F. Lange, M. Suppa, G. Hirzinger (German Aerospace Center (DLR), Germany)

2:20 Force controlled handling with cooperating industrial robots
A. Spiller, A. Verl (Fraunhofer IPA, Germany)

2:40 Filtering and Corner Detection in Predictive Robotic Contour Following
H. Koch, A. König, K. Kleinmann, A. Weigl-Seitz (University of Applied Sciences Darmstadt, Germany)
J. Suchý (Chemnitz University of Technology, Germany)

3:00 AR-based Approach for Evaluation of new Model-based Control Algorithms
S. Notheis, W. August, B. Hein, H. Wörn (Karlsruhe Institute of Technology (KIT), Germany)

Perception III

Room 5

Chair: P. Levi (University of Stuttgart, Germany)

2:00 A framework for object training and 6 DoF pose estimation
J. Fischer, G. Arbeiter, R. Bormann, A. Verl (Fraunhofer IPA, Germany)

**2:20 Segmenting Cylindrical and Box-like Objects
in Cluttered 3D Scenes**

L. C. Goron (Technical University of Cluj-Napoca, Romania)

Z. C. Marton (Technische Universität München, Germany)

G. Lazea (Technical University of Cluj-Napoca, Romania)

M. Beetz (Technische Universität München, Germany)

**2:40 Conceptual Similarity as a Key to High-Level
Robot Programming by Demonstration**

R. Cubek, W. Ertel (University of Applied Sciences
Ravensburg-Weingarten, Germany)

**3:00 From Saliency Based Image Features Towards
Semantic Mapping**

P. Neubert, N. Sünderhauf, P. Protzel (Chemnitz
University of Technology, Germany)

3:30pm

Closing Ceremony





General Information

Contact

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Registration

Please visit www.robotik2012.com for registration.

Category	Registration fee until 21 April 2012	Registration fee after 21 April 2012
Non-Member	690 EUR	760 EUR
Member (VDE, DGR)**	590 EUR	660 EUR
Speaker 1-2 Paper*	390 EUR	460 EUR
Student Speaker 1-2 Paper */**	250 EUR	320 EUR
Speaker -3 Paper*	780 EUR	920 EUR
Speaker -4 Paper*	1,170 EUR	1,320 EUR
Student**	250 EUR	320 EUR
Day Registration***	250 EUR	250 EUR
Additional Get Together Ticket	50 EUR	50 EUR

- Registration fees include proceedings as CD-ROM, coffee-breaks, Get Together and one AUTOMATICA fair ticket. The name badge as well as the AUTOMATICA fair ticket will be handed over to you at the conference registration desk open from 21 - 22 May 2012.
- Presenting authors, co-authors, committee members and session chairs are not exempt from paying registration fees. The registration fee for Session Chairs and Program Committee Members are € 350 or € 420 after 21 April 2012.

* Only ONE author can register for the Speaker fee. Please note that if you register as a Speaker you have to provide the EDAS-Paper ID(s) on your online registration.

** Copy of membership/student certification required. E-mail to vde-conferences@vde.com or by fax to +49-69 6308 144 in order to validate the registration. Otherwise full registration fee applies.

*** Excluding CD ROM and Get Together. Day Registration can only be chosen for a one day attendance and not for Speakers.





Cancellation policy

All requests for refund must be in writing and received on or prior to 21 April 2012 (except Speaker). No refunds will be granted after this date. There will be a 60 EUR service charge for all refunds.

Payment

Payment for registration, including bank charges and processing fees, must be made in Euro.

The conference fee has to be fully paid in advance.

Proceedings

All papers/posters accepted for presentation at the conference will be published as CD ROM and included in IEEE Xplore. The CD ROM will be handed on-site to all participants attending the event.

Hotel Reservation

For room reservation please check our Website

www.robotik2012.com  Accommodation.

Further accommodation can be booked at

www.muenchen.de/tourismus.

Please be aware that parallel to ROBOTIK 2012 there are several events taking place. We therefore recommend to book your room early.

Munich and the Conference Venue

Munich, the capital of Bavaria, is one of Germany's most exciting travel destinations and offers variety for every visitor. The lively city consists of a mixture of visible history of almost one thousand years and modern spirit. Please visit the official website at **www.munich.de** for further information.

ROBOTIK 2012 will take place in the ICM (International Congress Centre Munich)

The ICM is connected to the New Munich Trade Fair Centre where the fair AUTOMATICA will take place.

ICM – International Congress Centre Munich

MesseGelaende

Main Entrance ICM

81823 Munich

Tel.: +49 89 949 230 23

E-Mail: info@icm-muenchen.de

Registration Desk Hours

Monday, 21 May 2012, 9:00am to 6:15pm

Tuesday, 22 May 2012, 8:00am to 3:30pm

Availability by phone or e-mail on-site

Phone: +49-(0)89 949 33 750

E-mail: vde-conferences@vde.com

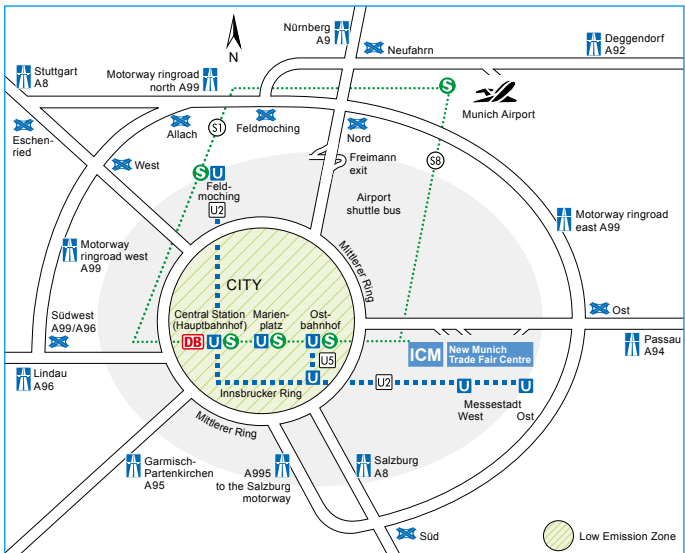
Official language

The official conference language is English.

All sessions will be held in English, only.

Transport

The ICM (International Conference Centre Munich) is situated directly next to the A 94 motorway. A dynamic traffic routing system shows you the way.



By train

From the main train station take the subway U2 direction "Messestadt Ost". Get off at Messestadt West and go to entrance West. After entering take a left and go straight until you reach the registration counter for ROBOTIK 2012.

By plane

Munich airport is located 28 km north east of Munich. The ICM (International Congress Centre) can be reached per shuttle bus, taxi or public transport from the airport.





Get Together

The Get Together will take place on 21 May 2012 in the ICM. The attendance is included in the conference fee (except Day Registration). Additional tickets may be ordered.

Insurance

The organizers may not be held responsible for any injury to participants or damage, theft and loss of personal belongings. Participants should therefore make their own insurance arrangements.

Passport and Visa Requirements

Foreign visitors entering Germany have to present a valid Identity Card or Passport. Delegates who need a visa should contact the German consular offices or embassies in their home countries. Please note that neither the VDE-Conference Services nor the supporting bodies are able to issue any **„Invitation“ for application of visa.**

All participants who need a Confirmation Letter for obtaining a visa are requested to send an email providing the information below to vde-conferences@vde.com with subject **“ROBOTIK – VISA LETTER”**.

Please be aware that Confirmation Letters will only be sent after full registration and payment have been made.

Full Name
Company
Date of Birth
Passport No.
Date of Issue
Date of Expiry
Place of Issue

Currency

The official currency in Germany is the Euro (€). Common credit cards (Mastercard, American Express, Visa) are accepted in hotels, department stores and most restaurants.

Monday, 21 May 2012

	Room 2	Room 4	Room 5
9:45-10:00			Welcome
10:00-11:30	Humanoid Robotics	Robotics in New Markets & Applications	Safety Requirements
11:30-12:00	Coffee Break		
12:00-12:45			Invited Talk I
12:45-1:45	Lunch Break		
1:45-3:15	Motion & Planning	Object Detection & Collision Avoidance	Domestic Robots
3:15-4:15	Poster Session and Coffee Break		
4:15-6:15	Perception I	Industrial Applications	Outdoor Robotics
6:15	Get Together		

Tuesday, 22 May 2012

	Room 2	Room 4	Room 5
8:45-10:15	Perception II	Trajectory Generation & Mobile Robotics	Medical & Health
10:15-10:45	Coffee Break		
10:45-12:15	Control 1	Programming & Architectures for Industrial Robots	Navigation and Mapping
12:15-1:15	Lunch Break		
1:15-2:00			Invited Talk II
2:00-3:30	Object Recognition and Grasping	Control 2	Perception III
3:30	Closing Ceremony & Coffee		

Contact

Any enquiries relating to the
ROBOTIK 2012 should be sent to:

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Stresemannallee 15
60596 Frankfurt am Main
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Kristin Neumann
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