

08:00 Registration

09:00 Session 1 | Chair: Andreas Müller

09:00 Welcome Notes by Organizers (JKU, LCM, GMAR)

09:20 Progress in humanoid whole-body control and locomotion: From stable walking to dynamic running with elastic actuators (TU Wien, German Aerospace Center DLR)

Keynote: Christian Ott

10:10 Poster Pitches (2 minutes)

Differentiable Forward Kinematics for TensorFlow 2

On the Applicability of Docker Containers and systemd Services for Search and Rescue Applications

Acceleration and Deceleration Behavior Monitoring and Runtime-Verification for Mobile Manipulators

Traversability Detection Algorithm for Outdoor Mobile Robots

Investigation of kinematic properties of a serial kinematic with angular swivel joints

Decision Support Model for Implementing a Human-Robot Collaboration

Low-Cost Multispectral Camera Array with Image Registration

L. Mölschl, J. Hollenstein, J. Piater

G. Novotny, S. Schwaiger, L. Muster, M. Aburaia, W. Wöber

N. Korb-Buzzi, M. Rathmair

B. Von Gimborn, G. Novotny

P. Trivisonne, K. Stuja, M. Aburaia

R. Sandor, C. Fischer, C. Schmidbauer, S. Schlund

M. Stohanzl, W. Kubinger

10:30 Coffee Break

10:50 Session 2 | Chair: Mathias Brandstötter

10:50 Autonomous In-hand Object Modeling from a Mobile Manipulator

P. Feigl, J.-B. Weibel, M. Vincze

11:10 From Simulation to Prototype to Series Implementation – a Workflow in Industrial Practice (Spotlight Presentation: Engel Austria GmbH)

M. Oberherber, F. Pucher, M. Pruckner, M. Kalkhofer

11:25 Deep Learning based Object Classification on mm-Wave Radar Data

A. Weissmann, M. Rathmair, M. Hofbaur

11:45 New Application Opportunities with Integrated High Accuracy Robotics (Spotlight Presentation: KEBA AG)

M. Garstenauer, C. Mittermayer

12:00 Neural Network Feedforward Control for Pneumatic Hexapod Excavator Simulator

S. Gadringer, C. Mayr, H. Gattringer, A. Müller

12:30 Lunch at KHG Mensa

13:45 Session 3 | Chair: Wilfried Kubinger

13:45	Integrated Simulation Workflow for Complex Automated System Design	S. Dumberger, D. Zouhar, U. Mitterhuber, R. Edlinger, R. Froschauer, A. Nüchter
14:05	An Approach for continuous Verification of Formal System Requirements in Robot-based Machinery	M. Rathmair, T. Haspl, M. Hofbaur
14:25	On the Combination of Computer-Vision and Advanced Planning for Reactive Applications in Industrial Robotics (Spotlight Presentation: Convergent Information Technologies GmbH)	C. Eberst
14:40	Time Optimal Trajectory Planning for a Rigid Formation of Nonholonomic Heavy Duty Platforms	S. Schmidt, H. Gattringer, A. Müller
15:00	Outlook ARW 2024	

15:05 Coffee Break

15:20 Lab Tour at Science Park

Science Park I: Robotics Lab (MT016), LCM Lab (MT014)

16:30 Session 4 | Chair: Markus Vincze

16:30	ToFSim: Real-time ToF Camera Simulation for Robotic Applications	H. Gietler, B. Ubezio, H. Zangl
16:50	Evaluating the Performance of a Modified Skin Temperature Sensor for Lower Limb Prostheses: An Experimental Comparison	A. Devroy, G. Fritz, M. Brandstötter
17:10	Relative Object Navigation for Autonomous Underwater inspection in confined environment (Spotlight Presentation: subdrone GmbH)	A. Carrera Vinas, T. Vonach
17:25	An Event-Based Approach to Autonomous Navigation	R. Hoheneder, A. Buchegger, H. Didari, M. Eder, K. Mautner-Lassnig, C. Mühlbacher, G. Steinbauer-Wagner

18:00 SOMNIUM Observation Deck (TNF Tower)

19:00 Conference Dinner KEPLER HALL with Best Paper Awards

08:30 Session 5 | Chair: Manfred Nader

08:30 Cognitive Robots: from Partly Completed Machines to Actually Useful Devices
(Neura Robotics GmbH)

Keynote: Jörn Malzahn

09:15 A toolchain definition to solve a vehicle routing problem for a time-efficient testing on a proving ground

R. Fina, H. Gatringer, A. Müller, T. Schlömacher, H. Scharke

09:35 Lessons Learned as Digital Innovation Hub in DIH² with cascading calls and FIWARE
(Spotlight Presentation: Linz Center of Mechatronics GmbH)

D. Reischl

09:50 Coffee Break

10:10 Session 6 | Chair: Justus Piater

10:10 EDGESOIL: LOW-COST SOIL SENSOR AND EDGE AI FUSION IN AGRICULTURAL ROBOTICS

R. Kasemi, M. Vincze, L. Lammer

10:30 An Approach to Numerical Inverse Kinematics of Serial Manipulators using Levenberg-Marquardt Optimization

R. Stadlhuber, F. Behnke, M. Aburaia

10:50 Counting Milliseconds (Spotlight Presentation: STIWA Group)

S. Wesenauer, P. Staufer

11:05 An Immersive Game Projection Setup for Studies on Collaboration with a Real Robot

B. Reiterer, M. Brandstötter, M. Mara, D. Rammer, R. Haring, M. Heiml, K. Meyer, T. Hoffmann, M. Weyrer, M. Hofbaur

11:25 Lunchtime Snacks

12:10 Session 7 | Chair: Andreas Müller

**12:10 The Robotics Safety & Security Stakeholder Cycle (RobSS Stakeholder Cycle):
A Model for Responsible, Safe and Secure Robotic Systems Engineering**

N. Duller, C. Glasauer, T. M. Nazir, J. Wachter

12:30 State Estimation for Keypoint-Tracking of Quadrotor-UAVs

R. Stadlhuber, W. Wöber

12:50 Plannable autonomy and cooperative navigation (Spotlight Presentation: DS Automotion GmbH)

L. Schwarz, A. Richtsfeld

13:05 A Universal Person Follower Interface for Mobile Robot Systems

J. Oberpertinger, M. Eder, G. Steinbauer-Wagner

13:25 Closing Ceremony