

intelligence empowering tomorrow

Meet the Future

Hightech Summit June 24, 2025

MESSE MÜNCHEN





We have compiled a program that sheds light on central areas of AI and robotics research and provides insights into developments across promising markets such as healthcare.



PROF. LORENZO MASIA

Professor in "Intelligent BioRobotic Systems" and Director of the Munich Institute for Robotics and Machine Intelligence (MIRMI) (TU Munich)

Run by:



automatica





We are especially pleased that, in addition to leading scientific contributions, global industry leaders will share their approaches to generative AI and engage in networking with the robotics community at munich_i.



PROF. DR. ANGELA SCHOELLIG

Member of the Board of Directors at the Munich Institute of Robotics and Machine Intelligence (MIRMI), Coordinator of the Robotics Institute Germany (RIG) professor in "Safety, Performance and Reliability of Learning Systems" (TU Munich)

munich_i Hightech Summit

The munich_i Hightech Summit is one of the world's toplevel events in the AI and robotics sector. Its unique format gathers international pioneers from science and industry in one place to facilitate practical knowledge exchange.

It thus enables first-hand expert knowledge transfer, an exclusive overview of the latest research, prototypes and innovations, as well as toplevel networking across sectors. The summit is held on **June 24 in Hall B4** of automatica, the leading exhibition for smart automation and robotics. The Hightech Summit held under the theme of 'intelligence.empowering. tomorrow' highlights the interaction between human and Artificial Intelligence and responsible technological change.

We look forward to your visit and to taking the next step on the path from hightech to practical applications with you.

MUNICH_I AGENDA

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Hightech up close

Apart from the summit itself, additional exciting formats make munich_i a groundbreaking and inspiring hightech platform.

AI.SOCIETY

The AI.Society special show has 29 prototypes and presents exciting lighthouse and research projects by startups and MIRMI/TUM in alignment with the four pivotal fields of work, health, mobility and environment.

EXECUTIVE ROUND TABLE

Renowned figures discuss the topic of "Al Robotics – the Competitiveness Booster" at the automatica Forum on **June 24 from 13:00 to 14:00.** Participants: **Dr. Corina Apachiţe**, Continental Automotive Technologies, **Prof. Dr. Lorenzo Masia**, TU Munich, **Dr. Francesco Nori**, Google DeepMind Robotics, **Wendy Tan White**, Intrinsic, **Marc A. Theermann**, Boston Dynamics.

ROBOTHON®

Robothon[®] – The Grand Challenge returns to automatica 2025 with a new twist: evolving from robot manipulation to intuitive manipulation. This global robotics competition focuses on developing intelligent, responsive robot behavior for real-world tasks – and this year's challenge pushes that even further.

Now in its fourth edition, Robothon® gathers international teams to tackle one of the most urgent issues of our time: electronic waste. Participants are tasked with building autonomous systems that perform complex manipulation tasks on an electronic task board and then transfer these skills to an application processing an e-waste object of their choice.

SESSION 1

Autonomy and Interaction in Robotics

Future robot generations will be capable of making and executing decisions independently. New technologies such as embodied AI, agentic AI, and powerful machine learning methods will play a key role in this context. What should we learn about autonomous robots?

Prof. Dr. Seth Hutchinson of the Northeastern University in Boston/USA states that mobile robots will closely cooperate with people in future work environments. A new generation of robots will, among other things, enhance the quality of life for people requiring care. Prof. Hutchinson outlines a software setting for these robots, which is based on safety, cooperation, and adaptability functions. **Prof. Dr. Sethu Vijayakumar**, Professor of Robotics at the University of Edinburgh, addresses the trade-off between ever-increasing autonomy and the desire for control and safety of future robot generations. In his talk, he presents powerful machine learning technology and outlines a balanced compromise between autonomy and control.

Prof. Dr. Antonio Bicchi, IIT Genoa/University of Pisa and publisher of the International Journal of Robotics Research (IJRR), focuses his talk on the development from human-robot interaction to human-robot integration. In this context, a robot can be thought of as a type of physical 'prosthetic device' fitted with extensive sensor technology. It is smart enough to 'guess' what humans want and acts accordingly – in both health-care and industrial environments.

Dr. Felix Ocker and his team from the Honda Research Institute Europe present 'decisive' robots that, apart from being capable of completely independent orientation, can also act and decide autonomously, i.e. without receiving commands from humans. They can even explain how they came to their decisions. This is possible thanks to agentic AI – an artificial intelligence still in its infancy.



Will be hosted by **Prof. Dr. Lorenzo Masia**, professor in "Intelligent BioRobotic Systems" and Director of the Munich Institute for Robotics and Machine Intelligence (MIRMI) (TU Munich).



Will be hosted by **Prof. Dr. Angela Schoellig,** member of the Board of Directors at the Munich Institute of Robotics and Machine Intelligence (MIRMI), Coordinator of the Robotics Institute Germany (RIG) professor in "Safety, Performance and Reliability of Learning Systems" (TU Munich).



PROF. DR. SETH HUTCHINSON

Professor Khoury College of Computer Sciences & Professor Electrical and Computer Engineering, Northeastern University

Mobile Manipulation: Safety, Cooperation, Adaptation

09:40 (20 min)



PROF. DR. SETHU VIJAYAKUMAR

Professor of Robotics, University of Edinburgh & Programme Director, The Alan Turing Institute

From Automation to Autonomy: Machine Learning for Nextgeneration Robotics

10:00 (20 min)



PROF. DR. ANTONIO BICCHI

Senior Scientist, Italian Institute of Technology & Chair of Robotics, University of Pisa

From Cobotics and Human-Robot Interaction to Human-Robot Integration

10:20 (20 min)



DR. FELIX OCKER

Senior Scientist, Honda Research Institute EU

When robots take initiative: Agentic Al for human-robot cooperation

10:40 (20 min)

SESSION 2 11:30-12:4

Connectivity in Cooperative Robotics

How do robots communicate when they collaborate to take AI-based decisions? What kinds of networks and data standards will they use, and what is the role of 6G in this?

'Vision Zero' – road traffic without casualties – is a central goal of the automotive industry. It can be only be achieved through extensive use of Al in future assistance system generations. This is what will make autonomous driving up to level 5 possible. **Dr. Corina Apachite** heads the Artificial Intelligence department at Continental Automotive Technologies and will describe how far globally leading automotive suppliers have come in their pursuit of these goals. **Prof. Maria Pia Fanti**, University of Bari, conducts research in the field of 'Cooperative, Connected and Automated Mobility' (CCAM) – in other words: the accelerated implementation of CCAM technology in cars and traffic infrastructure. She will present new research findings and simulation results in Munich.

Prof. Frank H. P. Fitzek, TU Dresden, presents a 6G-based network architecture that future robots will use to communicate and share large amounts of data with each other in real time as they collaborate to take AI-based decisions. His talk will also show how 6G is going to shape the next frontier of human-machine interaction.



Will be hosted by hosted by **Prof. Dr.-Ing. Darius Burschka**, Head of the Machine Vision and Perception Group at TUM School of Computation, Information and Technology (TU Munich).



Will be hosted by **Prof. Dr.-Ing. Birgit Vogel-Heuser**, holder of the Chair of Automation and Information Systems at TUM School of Engineering and Design (TU Munich).



DR. CORINA APACHIŢE

Head of Artifical Intelligence, Continental Automotive Technologies

How AI can help us to make our vision come true?

1:35 (20 min)



PROF. MARIA PIA FANTI

Professor of Control and System Engineering & Chair of the Laboratory of Automation and Control, Department of Electrical and Information Engineering, Polytechnic University of Bari

Artificial Intelligence Based Approaches for Integrating Cooperative, Connected and Automated Mobility in the Real Traffic

11:55 (20 min)



PROF. DR.-ING. DR. H.C. FRANK H. P. FITZEK

Professor and head of the "Deutsche Telekom Chair of Communication Networks", TU Dresden

Future Communication Networks for Collaborative Robotics

12:15 (20 min)

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SESSION 3 13:55-15:3

Generative AI in Robotics and Big Data

Google DeepMind, Meta, Microsoft, Nvidia: Researchers from the four globally leading companies provide insights into their development activities with a special focus on the fields of generative AI and Big Data. This is an industry session with top-level speakers – don't miss it!

About cutting-edge advancements in robotics through simulation speaks **Dr. Yashraj Narang**, Robotics Research Manager at NVIDIA Research. Leading the Simulation and Behavior Generation team within the Seattle Robotics Lab, he focuses on learned simulators, automated data generation, reinforcement learning, and sim-to-real transfer. **Dr. Franziska Meier**, scientist at Facebook Artificial Intelligent Research (FAIR@Meta), and her team are developing methods that make robots truly autonomous. Her talk will include examples from FAIR research that focus on providing robots with general skills for a wide range of applications.

Dr. Francesco Nori, Director of Google DeepMind Robotics, present Google's activities relating to the development of true general AI, which will enable robots to take on complex manipulation and locomotion tasks. Its purpose is to allow robots to navigate within their environment, complete new tasks independently, and perform complex manipulation tasks. **Dr. Katja Hofmann** heads the 'Game Intelligence Team' at Microsoft Research. She presents the latest findings in the development of ma-chine learning architectures for modelling complex 3D environments and human gameplay data. Robots with this technology are capable of collaboratively solving complex issues.

This session starts with an impulse by **Prof. Dr.-Ing. Eckehard Steinbach** (MIRMI/ TUM) and **Prof. Dr.-Ing. Alin Albu-Schäffer** (DLR), both part of the munich_i Pioneers Committee.



Will be hosted by **Prof. Dr. Achim Lilienthal**, Deputy Director of MIRMI and holder of the Chair of Perception for Intelligent Systems at TUM School of Computation, Information and Technology (TU Munich).



Will be hosted by **Prof. Dr. Patrick van der Smagt**, Head of Al at Foundation Robotics and member of the munich_i Pioneers Committee and Grand Challenge Jury member of the Robothon[®].



DR. YASHRAJ NARANG

Robotics Research Manager, NVIDIA Research

Accelerating Robotics Research through Simulation

14:05 (20 min)



DR. FRANZISKA MEIER

Research Scientist and Manager, Facebook Atrificial Intelligence Research (FAIR) at Meta AI

Towards robots that generalize and adapt efficiently

14:25 (20 min)



DR. FRANCESCO NORI

Director, Google DeepMind Robotics

Google DeepMind Robotics

14:45 (20 min)



DR. KATJA HOFMANN

Senior Principal Research Manager, Microsoft

What can we learn from human gameplay data?



SESSION 4 16:05–17:3

Future Medical Robotics

Miniaturized surgical robots controlled with magnetic fields as they travel through human bodies, and living bio-hybrid musculoskeletal robots: The confluence of AI, robotics, and medical technology is an extremely exciting field of research.

The talk by **Prof. Dr. Stefanie Speidel**, TU Dresden, is all about Al-powered robotic surgery with a particular focus on the analysis of in-traoperative video data. The goal is to digitize surgical skills and to improve the collaboration between surgeons and cyberphysical systems by quantifying surgical experience and making it accessible to machines. The research conducted by **Prof. Dr. Pietro Valdastri**, University of Leeds, includes the development of minimally invasive surgical methods using miniaturized robots and surgical tools controlled via magnetic fields. They can penetrate human tissue without inflicting any harm on the patient. He will share his knowledge in his talk on 'Livesaving soft magnetic surgical robots'.

Dr. Chiheb Dahmani, Head of Technology & Innovation for mechatronic products at Siemens Healthineers, provides an overview of current and future fields of application for robots and robotic exoskeletons in healthcare environments – including operating theaters, rehabilitation, and nursing. He will also address the limits of this technology in direct contact with patients.

The Session ends with a Hightech Summit Recap by **Prof. Dr. Angela Schoellig** (MIRMI/TUM) and **Prof. Dr. Daniel Rixen** (MIRMI/TUM).



Will be hosted by **Prof. Dr-Ing. Tamim Asfour,** Professor at the Institute for Anthropomatics and Robotics of the Karlruher Institut of Technology (KIT), where he holds the chair of Humanoid Robotics Systems and is head of the High Performance Humanoid Technologies Lab (H2T).



Will be hosted by **Prof. Dr. Cristina Piazza**, Assistant Professor at the Chair of Computer Aided Medical Procedures (TU Munich).



PROF. DR.-ING. STEFANIE SPEIDEL

Head of Department for Translational Surgical Oncology, National Center for Tumor Diseases (NCT) Dresden UKD/TU Dresden

Beyond the Scalpel: Revolutionizing Surgery with Al and Robotics

6:10 (20 min)



PROF. DR. PIETRO VALDASTRI

Full Professor & Chair in Robotics and Autonomous Systems, School of Electronic and Electrical Engineering, University of Leeds

Lifesaving soft magnetic surgical robots

6:30 (20 min)



DR. CHIHEB DAHMANI

Head of Technology & Innovation, Siemens Healthineers AG, Technology Excellence Mechatronic Products

Robotics in Healthcare: Triumphs, Trials, and the Road Ahead

16:50 (20 min)





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TIME	SPEAKER / HOST	ТОРІС
09:30	Dr. Reinhard Pfeiffer (Messe München)	Opening speech
09:33	Prof. Lorenzo Masia and Prof. Angela Schoellig	Discussion and Welcome
09:35	Session 1: Prof. Lorenzo Masia & Prof. Angela Schoellig	Autonomy and Interaction in Robotics
09:40	Prof. Seth Hutchinson (Northeastern University)	Mobile Manipulation: Safety, Cooperation, Adaptation
10:00	Prof. Dr. Sethu Vijayakumar (University of Edinburgh & The Alan Turing Institute)	From Automation to Autonomy: Machine Learning for Next-generation Robotics
10:20	Prof. Antonio Bicchi (IIT & University of Pisa)	From Cobotics and Human-Robot Interaction to Human-Robot Integration
10:40	Dr. Felix Ocker (Honda Research Institute Europe)	When robots take initiative: Agentic Al for human-robot cooperation
11:00		Q & A / Break
11:30	Session 2: Prof. Darius Burschka & Prof. Birgit Vogel-Heuser	Connectivity in Cooperative Robotics
11:35	Dr. Corina Apachițe (Continental Automotive Technologies)	How AI can help us to make our vision come true?
11:55	Prof. Maria Pia Fanti (Polytechnic University of Bari)	Artificial Intelligence Based Approaches for Integrating Cooperative, Connected and Automated Mobility in the Real Traffic
12:15	Prof. DrIng. Dr. h.c. Frank H. P. Fitzek (TU Dresden)	Future Communication Networks for Collaborative Robotics
12:35		Q & A / Break



Subject to short-term changes – the updated program overview is always available here:



ΤΙΜΕ	SPEAKER / HOST	ТОРІС
13:55	Prof. Eckehard Steinbach and Prof. Alin Albu-Schäffer	Impulse Speech
14:00	Session 3: Prof. Patrick van der Smagt & Prof. Achim Lilienthal	Generative AI in Robotics and Big Data
14:05	Dr. Yashraj Narang (NVIDIA Research)	Accelerating Robotics Research through Simulation
14:25	Dr. Franziska Meier (FAIR@Meta)	Towards robots that generalize and adapt efficiently
14:45	Dr. Francesco Nori (Google DeepMind)	Google DeepMind Robotics
15:05	Dr. Katja Hofmann (Microsoft)	What can we learn from human gameplay data?
15:25		Q & A / Break
16:05	Session 4: Prof. Tamim Asfour & Prof. Cristina Piazza	Future Medical Robotics
16:10	Prof. DrIng. Stefanie Speidel (National Center for Tumor Diseases (NCT/UCC) Dresden)	Beyond the Scalpel: Revolutionizing Surgery with AI and Robotics
16:10 16:30	Prof. DrIng. Stefanie Speidel (National Center for Tumor Diseases (NCT/UCC) Dresden) Prof. Pietro Valdastri (University of Leeds)	Beyond the Scalpel: Revolutionizing Surgery with AI and Robotics Lifesaving soft magnetic surgical robots
16:10 16:30 16:50	Prof. DrIng. Stefanie Speidel (National Center for Tumor Diseases (NCT/UCC) Dresden) Prof. Pietro Valdastri (University of Leeds) Dr. Chiheb Dahmani (Siemens Healthineers)	Beyond the Scalpel: Revolutionizing Surgery with AI and Robotics Lifesaving soft magnetic surgical robots Robotics in Healthcare: Triumphs, Trials, and the Road Ahead
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