Technical University of Munich (TUM)

MIRMI Newsletter 2023 - June / July

Community

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12. July 2023

Indo-German Fellowship: a seed project for future collaboration in the field of prosthetics

Dr. Amartya Ganguly (Technical University of Munich, Germany) and Dr. Saikat Kumar Shome (CSIR Central Mechanical Engineering Research Institute, India) want to build an open-source musculoskeletal model of the hand to drive a robotic hand in a simulated user-in-loop environment using low-cost motion capture system. This approach has several potential benefits, including affordability and accessibility in developing prosthetic end effectors. The researchers from German and Indian institutions decided to join forces. The PECFAR Fellowship enabled them to create a platform for collaborative research in India and Germany.

11. July 2023

10 videos of automatica

At Automatica at the end of June 2023, more than 30 research teams showed their current developments on the AI.Society site as part of munich_i. Here is a selection from medicine, manufacturing, care and mobility.

10. July 2023

Celebrating Technological Collaboration and Innovation at munich_i: Highlights from the Hightech Summit, AI.Society, and Robothon®

What are the risks and benefits of technology in work, health, mobility, and the environment? The high-tech platform munich_i, a joint project of automatica, Messe München, and the Munich Institute of Robotics and Machine Intelligence (MIRMI), fosters interdisciplinary cooperation between research and industry. Under the theme of "intelligence empowering tomorrow," munich_i showcased more than 40 presentations, 35 prototypes, 28 guided tours, it helded Robothon® Award Ceremony and provided a stage for renowned pioneers to discuss their ideas and promote technological advancement in service of society at automatica 2023. The next automatica will take place from June 24 to 27, 2025.

07. July 2023

Bavarian Order of Merit for TUM members

Minister President Dr. Markus Söder presented the Bavarian Order of Merit to TUM members Alena Buyx, Professor of Ethics in Medicine and Health Technologies, and Heribert Schunkert, Professor of Cardiology. The Order is awarded annually in recognition of outstanding contributions to the Free State of Bavaria.

06. July 2023

First AI experimentation space for automatic knowledge generation

The Scientific Council has approved the construction of a new research building at the Technical University of Munich (TUM). The TUM Center for Embodied Laboratory Intelligence (TUM ELI) will receive 51 million euros in funding starting in 2024. The research facility is scheduled to go into operation in 2028.

05. July 2023

Geriatronics Summit 2023: Robotics and AI technology for supporting the care of older adults

Following the success of last year's edition, the Geriatronics Summit 2023 successfully brought together researchers from AI and Robotics with care providers, the general public, stakeholders in the field of care for older adults and people with lived experience of disability at the beautiful Garmisch-Partenkirchen, the district with the largest elderly population in the Free State of Bavaria, Germany. With a fantastic line-up of 16 speakers coming from the east and west coast of the US, UK, and from several countries in the EU, and about 100 participants from all over the world, the summit was the perfect venue for an enlightening and stimulating conversation and exchange of ideas about the state-of-the-art and the future directions of robotics and AI technology for supporting the care of older adults.

27. June 2023

Robotics and AI: practical insights into leading-edge research

At this year's automatica trade show, the munich_i high-tech platform will highlight robotics and AI developments for the third time. More than 30 demos will be on display in the AI.Society exhibition. The i_Space stage program will include the award presentation for this year's winner of the Robothon competition for young researchers as well as round table discussions and featured speakers. The High-tech Summit will also bring together some of the world's leading researchers in robotics and AI.

21. June 2023

ChatGPT: reasoning machine needs to be regulated

ChatGPT can make programming more efficient, write texts, act as a brainstorming partner or create design proposals. But when it comes to the deployment of generative artificial intelligence in the physical world of robotics, researchers at the Technical University of Munich (TUM) are cautious.

20. June 2023

Faces of Robotics: What MIRMI professors are like - Video

They deal with robotics and AI every day. But at the end of the day, they are human beings, just like anyone else: our professors at Munich Institute of Robotics and Machine Intelligence (MIRMI) give quick answers to short questions. Meet Berna Özkale Edelmann, Cristina Piazza, Stefan Leutenegger and Hussam Amrouch in the video.

19. June 2023

Climate impact of natural gas often worse than assumed

Heating and cooking with natural gas often has a greater impact on the climate than commonly believed. This is a conclusion of a new calculation model developed by researchers at the Technical University of Munich (TUM). The difference: the researchers' model also takes into account the enormous quantities of unused gas released into the atmosphere.

15. June 2023

New solutions for the industry of the future

Our researchers are responsible for two long-term projects, the "KI.FABRIK" and the "German-French Academy for the Industry of the Future" (GFA), in which they are shaping the future working world, together with international partners from industry and research.

14. June 2023

IABG becomes TUM Venture Labs Platinum Partner

As a new Platinum Partner, security solution technology specialist IABG will in the future support TUM Venture Labs in promoting start-ups at the Technical University of Munich (TUM). The owner-managed corporation based in Ottobrunn near Munich will specifically support start-up teams from the field of artificial intelligence.

14. June 2023

Robotics and AI as the decathlon of engineering sciences

A robot can be as small as a pill or as big as a (self-driving) car. It can look like a person or fly like a drone. "A robot," says Angela Schoellig, Humboldt Professor at the Technical University of Munich (TUM), "is the continuation of what humans have been doing since the Stone Age: developing tools to perform tasks faster and better." At TUM, many researchers at the global forefront of their fields are addressing a wide range of challenges in robotics.

05. June 2023

More transparency for AI in diagnostics

Artificial Intelligence (AI) has the potential to support diagnoses in radiology. However, until now, a lack of transparency has often made it difficult to understand the recommendations made by AI. Researchers have now investigated whether and how the visual representations used in AI image analysis – referred to as saliency maps – can help. In this interview, Alessandro Wollek, a doctoral candidate in the field of computer science, and Theresa Willem, a doctoral candidate in Medical Ethics, explain how their results can help make AI more transparent.

Events, Calls, and More

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21. July 2023

Prof. Dr.-Ing. Dr. med. h.c. Robert Riener (ETH Zurich) talks about Bridging the Gap between Patient, Robot, and the Therapist

The aging of our population is increasingly challenging our healthcare system, because of the shortage of funding and personnel. Robots can help solve these challenges, for example by performing therapeutic inventions more accurately and faster, and by being able to better adapt to individual preferences and needs.

This talk provides an overview of current and future robotic systems applied to the rehabilitation and assistance of people with motor impairments. Furthermore, it presents the CYBATHLON, an international competition that promotes the development of advanced assistive technologies and supports the inclusion of people with disabilities in our society.

17. August 2023

TUM Grand Rounds Live Event

We are pleased to invite you to our upcoming TUM Grand Rounds Live Event in August. Prof. Dr. Bloch and Prof. Courtine from Lausanne will present their recent work published in their landmark paper in Nature about Brain-Spine Interfaces in Patients with spinal cord injury.

13. September 2023

The Responsible AI Forum

Artificial intelligence (AI) will have a significant impact on nearly all areas of society. The Responsible AI Forum (TRAIF) aims to discuss ethical challenges related to AI through an international conference. Join us for the second edition of the conference, #TRAIF2023!

20 - 21. September 2023

Workshop on Human-Friendly Robotics (HFR 2023)

The Technical University of Munich (TUM) and Deutsches Zentrum für Luft- und Raumfahrt (DLR) are pleased to announce the 16th International Workshop on Human-Friendly Robotics (HFR 2023). The HFR aims to shed light on current and envisioned AI and robotic solutions in the context of human-robot interaction and human-centric applications both in home and service scenarios as well as for industrial tasks. We aim to bring together a diverse group of researchers, experts, and industrial partners who are working on closing the gap between robots and humans in a safe and meaningful way, and to promote novel applications in human-centric environments and with/alongside humans. Furthermore, the workshop will also focus on fostering collaboration and exchange of ideas among a diverse set of researchers, and the direct applicability of existing and underdevelopment solutions in the context of human-robot interaction, coexistence, and collaboration.

Recommended Readings, Videos, and Podcasts

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Robotics, digitization, AI: Trends at Automatica 2023

By Jan-Claudius Hanika / BR24 (27. June 2023)

Ulrich Walter on AI, space technology and the view of Earth from space. – Video

By münchen.tv (24. June 2023)

AI: Work plan as desired

By Therese Meitinger / LOGISTIK HEUTE (19. June 2023)

[TU Munich teaches robots to live with the help of AI](#)
By Dominik Hochwarth / Ingenieur.de (15. June 2023)

[Study: Many employees expect AI to lose their jobs - Podcast](#)
By Alexander Arnö, Andreas Schuster / BR Podcast (BR24) (07. June 2023)

[EU Commission: Companies should label AI content- Podcast](#)
By Jakob Mayr, Kathrin Hondl / BR Podcast (BR24) (05. June 2023)

Jobs Offers

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- [PhD/Postdoctoral Researcher (m/f/d). Multi-Domain Computational Modeling of the Neuromuscular System for the Human Digital Twin](#)
- [Research Scientist Computational Modeling (m/f/d)](#)
- [PostDoc position for Neural Interfacing Field at MIRMI](#)
- [Senior scientist position with a strong background in human-robot interaction.](#)
- [Senior scientist position with a strong background in service robotics and human-robot interaction with a focus on control and planning](#)
- [Teamassistenz mit Fokus Finanzen (m/w/d)](#)
- [Teamassistent/in (m/w/d) am Standort Garmisch-Partenkirchen / Forschungszentrum Geriatronik](#)
- [Teamassistent/in (m/w/d) mit Schwerpunkt Finanzen](#)

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Post your job with us!
If you are a MIRMI member or partner looking for talents
to support your activities in robotics and AI, send us
your job post with subject "job_post_newsletter" to
community@mirmi.tum.de

Give us feedback
Your feedback is important to us. Let us know if
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