

Technical University of Munich (TUM)

MIRMI Newsletter 2022 - November

Community

30. November 2022

[Robots as assistants in the operating room](#)

After almost three years of development, the time has come: For the first time, a robot in the experimental operating theatre of the MITI research group takes over the tasks of an "operating theatre jumper" in the non-sterile area. He fetches sterile materials - such as suture material or surgical gloves - from the warehouse, brings them to the operating theatre, opens the packaging and hands the sterile goods to the surgeon. Lukas Bernhard, a doctoral student at the Klinikum rechts der Isar of the Technical University of Munich (TUM), talks about the capabilities of the AURORA robot.

22. November 2022

[12 ERC Starting Grants awarded to TUM researchers](#)

Twelve talented researchers at TUM have been awarded ERC Starting Grants by the European Research Council (ERC). The European Union provides these research grants to academics early in their careers. These talented individuals submitted their leading-edge research projects to a competition and have now been selected by a high-ranking group of experts. Among them is MIRMI member Prof. Dr. Pramod Bhatotia, who aims to develop a reliable and secure Decentralized Operating System (DOS) in a policy-compliant manner.

22. November 2022

[MIRMI Industry Advisory Board meets at BMW Group Plant](#)

High-level representatives from the largest and most experienced international technology companies from various industries and MIRMI Principal Investigators met at the BMW Group Plant Munich last week. Discussions covered key topics such as autonomous driving, trustworthy AI, industrial robotics and AI challenges, hackathons, entrepreneurial initiatives, and MIRMI/TUM's latest research initiatives. Current collaborative projects between industry and MIRMI to build up the factory of the future (KI.FABRIK BAYERN) and to increase sustainability in agriculture were also addressed. The discussions were followed by a guided tour through BMW's cutting-edge technology in its industrialization space.

18. November 2022

[MIRMI bachelor student Benjamin Bogenberger receives VDE Award](#)

Benjamin Bogenberger was presented with the VDE Bayern Award in the Science category for his Bachelor's thesis at the VDE Bayern Abend 2022 at the Bayerischer Hof. The then Bachelor's student of electrical engineering and information technology at the Technical University of Munich (TUM) has developed a solution that enables a robot to plan new paths using user guidance while reliably avoiding collisions with suddenly appearing obstacles.

15. November 2022

Tumors: forecasting the risks of brain surgery

Can surgeons quantify the risk of aphasia when removing a brain tumor? To find out, researchers at Klinikum rechts der Isar of the Technical University of Munich (TUM) are analyzing the brain as a network. In a current study with 60 patients, they already achieved an accuracy rate with three-quarters of their predictions.

11. November 2022

Researchers from Mc-Kinney Møller Institute of SDU visit MIRMI – Recording available

On Friday, Nov 11, 2022, the MIRMI team had the pleasure of receiving Prof. Mikkel Baun Kjærgaard and the PhD student Juan Heredia from the Mc-Kinney Møller Institute of SDU, University of Southern Denmark at the research facility in Georg-Brauchle-Ring in Munich. The guests gave a Talk titled “Software Engineering of Robotic Systems”, followed by a Q&A session and a demo tour where key topics such as safety, data security, energy efficiency, and user-based robotics solutions were discussed. You can find the recorded talk on MIRMI's YouTube Channel.

07. November 2022

robo.innovate hackathon winners

What a finale! The robo.innovate hackathon teams have put their work from the past 4 weeks together and delivered their prototypes in one final push over the weekend. Along the way, the teams showed an extraordinary amount of resilience and determination to complete their projects. The results are beyond what we could imagine! Meet the winning teams.

01. November 2022

Munich's lighthouse project 'Digital Heart Surgery': What can artificial intelligence do in cardiac medicine?

In a pioneering collaboration, physicians and engineers from the German Heart Institute Munich and the Munich Institute of Robotics and Machine Intelligence are working together to develop new precision instruments for the operating room, cardiac catheterization laboratory, and intensive care unit. You can learn more in the article published by KTM journal. Krankenhaus Technik + Management, pages 32 – 35.

01. November 2022

Effective Science Management

TUM courses for scientific staff members and research and sciences managers are designed to provide you with concrete tools and techniques for effective science management. You are given the opportunity to learn from each other and to jointly develop best practices in science management.

Events, Calls, and More

30. November 2022

Become a Jugend forscht juror and support STEM education

Jugend forscht is Germany's best-known research competition for young people from the 4th grade to the age of 21. The competition promotes STEM education throughout Germany since 1965. Talents compete in six Jugend forscht subject areas: Working World, Biology, Chemistry, Mathematics/Computer Science, Physics, and

Technology. The Munich West Regional Competition is organized every year by Franka Emika, the Robokind Foundation, and MIRMI. You can participate in this exciting initiative by joining any of the Jugend forscht jury teams. The event will take place in person on 15 and 16 February 2023. If you are interested, please send a message to community@mirmi.tum.de stating your professional profile and your preferred 3 topic areas for which you would be suitable as a juror. Please note that the official language of the competition is German.

01. December 2022

Seminar “Robotics and machine intelligence in Hong Kong”

TranslaTUM hosts on Thursday 1 Dec. 2022 / 11:00 – 13:00 the Seminar “Robotics and machine intelligence in Hong Kong”. Two talks will take place. The first talk is titled “Embracing Mechanical Intelligence for Agile Locomotion, by Prof. Au, Kwok Wai Samuel, Professor at the department of Mechanical and Automation Engineering, CUHK. And the second Talk is titled “Flexible sensing and actuation for control and fabrication of image-guided robotic devices” by Prof. Ka-Wai Kwok, Associate Professor in Mechanical Engineering at the University of Hong Kong. More information is available on the seminar flyer.

28. January - 02. February 2023

Registration is now open for SPIE Photonics West 2023

Plan your visit to one of the world’s largest lasers, biomedical optics and biophotonic technologies, quantum, and optoelectronics events, 28. Jan - 02. Feb. 2023. Hot Topics and plenary speakers already confirmed include Vasilis Ntziachristos, TUM Professor for Biological Imaging and MIRMI member.

Recommended Readings, Videos, and Podcasts

Artificial intelligence in medicine: "Must feel like a human, not a robot"

By Judith Braun / 24vita (26. November 2022)

Brainlab becomes platinum partner of TUM Venture Labs

By Regina Bruckschlägl / Munich Startup (22. November 2022)

The Center for Digital Technology and Management wants to train young people in entrepreneurship

By Business Punk / Nicole Plich (08. November 2022)

IROS 2022 Keynote: Safe Learning in Robotics by Prof. Angela Schoellig - Video

By Prof. Angela Schoellig / TUM / University of Toronto (27. October 2022)

Over the hump: Foot function is a key to understand global walking dynamics. Physical Review E

By Daniel Renjewski, Susanne Lipfert, and Michael Günther / TUM Chair of Applied Mechanics (23. October 2022)

Image Quality Improvement Techniques and Assessment Adequacy in Clinical Optoacoustic Imaging: A Systematic Review

By Ioannis Dimaridis, Patmaa Sridharan, Vasilis Ntziachristos, Angelos Karlas, and Leontios Hadjileontiadis (20. October 2022)

Give us feedback

Your feedback is important to us. Let us know if you have comments or recommendations at community@mirmi.tum.de

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