Technical University of Munich (TUM)

MIRMI Newsletter 2023 - February

Community

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23. February 2023

KI.FABRIK: Robots as Teammates

Researchers at the Technical University of Munich (TUM) are developing a new type of factory where humans and robots work together using artificial intelligence (AI). The KI.FABRIK project aims to create scalable, flexible manufacturing with robots that can learn and support humans in their work. The factory relies on digital twins, robotic hardware, and a central AI platform to control and manage the robots. Researchers are exploring eight different areas, from teleoperation to network design, and focusing on creating individual, mechatronic products at a reasonable cost. The goal is to create a factory where robots act as teammates to humans, rather than simply performing programmed tasks.

23. February 2023

International conference AI.BAY underlines Bavaria's influence as a world-class AI location

More than 500 participants attended the AI.BAY international conference in Munich, which featured a showcase of research and exhibitions by companies, highlighting Bavaria's influential position in the field of artificial intelligence (AI). The conference addressed a range of topics, including trustworthy AI and the future of the field, and was attended by international experts in AI, alongside the Bavarian Minister-President Söder and various other ministers from the region. Bavaria is investing heavily in technology, particularly in AI, with the Hightech Agenda initiative alone investing over 3.5 billion euros and creating 100 KI professorships, according to Dr. Markus Söder, the Bavarian Minister-President.

15. February 2023

Datarecorder: Making AI transparent

When humans meet robots, many people feel uncomfortable. That is why researcher Maximilian Braun from the TUM School of Social Science and Technology at the Technical University of Munich (TUM) and his colleagues are working on a data recorder that anonymously records how humans and robots interact.

14. February 2023

Calculating collision risks: with the constant bearing principle

The TUM professor Darius Burschka aims to prevent collisions between drones or cars in traffic. His solution works similar to the compound eye of a wasp, which swivels its body back and forth to build a mental map. Burschka's computer system checks the pixels of a camera 60 times per second and determines the 'collision conditions'. He does not need a supercomputer for the calculation, only a powerful graphics processor that

handles image processing. The new method allows scientists to analyze movements with a single camera, which moves as the object does. The use of Time to Interaction would therefore be a paradigm shift for research.

06. February 2023

TUM Friedrich Schiedel Fellowship for Technology in Society founded

The Technical University of Munich (TUM) has established the TUM School of Social Sciences and Technology (SOT) to strengthen societal acceptance of scientific and technological developments through interdisciplinary collaboration. The new TUM Friedrich Schiedel Fellowship for Social Sciences and Technology aims to take this collaboration to a new level by providing financial support for joint research projects between social scientists and technical experts in fields such as robotics, quantum technologies, and digital medicine. The Friedrich Schiedel Foundation has committed up to €625,000 over five years, which will be matched by TUM. The fellowship program will be evaluated and selected three times a year by TUM-IAS.

01. February 2023

Cancer research at TUM

Scientists at the Technical University of Munich (TUM) are advancing cancer research by integrating medicine with natural sciences, life sciences, engineering, and informatics. Their approach has led to discoveries such as understanding aggressive plasma cell behavior in incurable blood cancer and creating an organoid model for tracking pancreatic cancer growth. TUM researchers are also involved in developing a quantum hyperpolarizer for enhancing PET-MRT scans and a nanoswitch by TUM spin-off Plectonic Biotech to aid targeted immunotherapies with reduced side effects.

01. February 2023

"Future research of international top format": Around 16 million EU funding for eight outstanding research projects in Bavaria

Eight male and female scientists at Bavarian universities will receive Consolidator Grants from the European Research Council (ERC) in 2022. The project funding, worth up to €2 million, will go to researchers at the Technical University of Munich, the Klinikum rechts der Isar of the Technical University of Munich, the Ludwig Maximilian University of Munich, the Friedrich Alexander University of Erlangen-Nuremberg, and the Julius Maximilian University of Würzburg. The ERC supports 321 established and outstanding researchers across Europe to conduct specific research projects. The projects will be funded for a period of five years, each receiving up to €2 million.

Events, Calls, and More

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07. February 2023

Robothon® call for teams is open until February 28, 2023, 23:59 CET

Are you a motivated robotics enthusiast looking for new challenges? Rally a team of 2 - 4 members and join Robothon® – The Grand Challenge! Prize money of more than €10,000 awaits the winners. Apply now!

02. February 2023

"We live logistics sustainably"

The 30th German Material Flow Congress will take place from March 23 to 24, 2023 in Garching near Munich and will address the challenges facing the intralogistics industry. Experts will discuss how supply chains can be designed and managed in the future to meet these challenges. The event focuses on topics such as sustainable logistics, innovative material flow systems, technological trends, changes in the world of work, logistics real estate, and supply chain management. Innovative start-up ideas in intralogistics and the presentation of the Innovation Award for Logistics will also be discussed.

Recommended Readings, Videos, and Podcasts

The majority of companies are strangers to AI

By SPIEGEL Netzwelt (24. February 2023)

Pointer to the future

By Süddeutsche Zeitung (23. February 2023)

Söder: AI should make life easier and better

By Bernd Oswald / Bayerischer Rundfunk 24 (BR24) (23. February 2023)

New TUM robotics lab in the Deutsches Museum

By Inka Krischke / computer and automation (computer-automation) (23. February 2023)

Research: E-cars will be cheaper than combustion engines in the future

By Walter Kittel / Bayerischer Rundfunk 24 (BR24) (18. February 2023)

The male nurse made of plastic and cables

By Arnd Janssen / Rheinische Post (RP) (13. February 2023)

A robot that waiters better than a human

Martina Scherf / Süddeutsche Zeitung (SZ) (28. January 2023)

Robots and artificial intelligence: How are they changing our lives? - Broadcast

By BR Münchner Runde (25. January 2023)

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