



## Starting Signal for Graz Center for Machine Learning

The Graz Center for Machine Learning (GraML) research network was launched at TU Graz. The focus is on machine learning, which, according to the head of GraML Robert Legenstein, will change the world in a similar way to the internet and computers.

**Susanne Filzwieser**

Artificial intelligence and machine learning are becoming one of the most important tools of the future. "Machine learning will change our world just as the internet and computers have done," says a convinced Robert Legenstein. He heads the Institute of Theoretical Computer Science at Graz University of Technology (TU Graz) and recently also the new Graz Center for Machine Learning.

TU Graz has established this research network, known as GraML for short, in order to significantly advance the further development of machine learning. Interdisciplinary work is being done on the further development of machine learning – whether to draw efficient and meaningful conclusions from big data, to find the most optimal material combinations or to make the systems themselves one step smarter.

All GraML participants will introduce the unique scientific angles of their daily research. The scientific work is divided into six core research areas, which are primarily dedicated to the foundations of machine learning, and several flexible modules. The six GraML core research areas are: Visual Intelligence, Optimization in Machine Learning, Ressource-efficient and brain-inspired Machine Learning, Probabilistic Methods and Causal Models, Recommender Systems and Behavioural Analytics as well as Domain Specialized Machine Learning and Trust. In addition to the core research areas, research will be conducted on the application of machine learning methods to a wide range of domains, with experts from the field of machine learning working closely with representatives from other faculties. ■



## Science shapes the future – TU Graz Science for Future

Digital Visions was the topic at the TU Graz science day 2022. The keynotes "From data to knowledge – a journey to the extreme" by Lothar Thiele and "Dependability in the internet of things" by Kay Römer are available to watch online.

**Birgit Baustädter**

At the science day of TU Graz, researchers show how they are meeting societal challenges across all disciplines with innovative technologies and shaping our future.

### FROM DATA TO KNOWLEDGE

ETH Zurich professor and renowned digital expert Lothar Thiele spoke at the beginning of the event about how knowledge can ultimately be gained from the vast amounts of data collected. A road paved with enormous scientific challenges. Thiele also touched on the possibilities of using big data to observe and analyse environmental processes and ultimately make predictions that can be used to ensure an environment worth living in.

### DEPENDABLE INTERNET OF THINGS (IOT)

TU Graz professor and head of the first lead project at TU Graz Kay Römer presented the results of his eponymous project, which was completed after six years of research, in his lecture "Dependability in the internet of things". He spoke about safety-critical applications in the IoT, the foundations of dependability and security and the industrial application of the results achieved.

### 2023

The next science day "TU Graz – Science for Future" will take place in September 2023. Everything will revolve around the topic of smart production and smart factories. Make a note of the date in your calendar. ■