INAUGURAL LECTURE

Univ.-Prof. Dr. Günter Klambauer
LIT AI Lab

After studying mathematics and biology at the University of Vienna, Günter Klambauer began his research work in the field of machine learning and artificial intelligence at the Johannes Kepler University Linz in 2010, where he obtained his doctorate in 2014. For his application of machine learning techniques in genetics and molecular biology, he was honoured with the Austrian Life Science Award 2012 and the Award of Excellence of the Austrian Ministry of Science in 2014.
The "Self-normalizing neural networks" he developed were incorporated into Apple's Siri speech recognition system in 2020, and major pharmaceutical companies such as Johnson&Johnson, Astra Zeneca and Merck use AI systems developed by his group. As a distinguished researcher in the European Network of Excellence ELLIS, he has been leading the "Machine Learning for Molecule Discovery" program as a Director there since 2024.
Günter Klambauer is promoted to professor for "AI in Life Sciences" at the LIT AI Lab at the Johannes Kepler University Linz. He was instrumental in the introduction of the "Artificial Intelligence" study program at the JKU, holds the central lectures "Deep Learning and Neural Networks" and heads the "Artificial Intelligence in Life Sciences" branch of study. Recently, he served as a coordinator of the Cluster-of-Excellence „Bilateral Artificial Intelligence“ which has been granted 33M€ and will start in October 2024.

Tuesday, June 4 2024, 16:30
Festsaal, Uni-Center, 1st Floor

Artificial Intelligence In Life Sciences

Over the last decade, Artificial Intelligence and Deep Learning methods have paved their way into all kinds of computational task in Life Science. One of the prominent success was AlphaFold, a method that solve a decade-old problem to predict the 3D structure of a protein based on the sequence of amino acids. This lecture will intuitively explain the basis of Deep Learning methods at the example of the large language model ChatGPT, including concepts such as input and context, a computational model, and training data or text corpus. We then dive into how this basis can be used in Life Sciences, for example to predict properties of molecules, suggest diagnoses on medical images, or speed up drug discovery. As we peer into the future, the lecture concludes by offering insights into the evolving landscape of AI methods within Life Sciences, hinting at the promising horizons awaiting exploration and innovation.