



Cluster of Excellence Machine Learning: New Perspectives for Science

www.ml-in-science.uni-tuebingen.de

Cluster Colloquium "Machine Learning" Seminar Series of the Cluster of Excellence

Wednesday February 3, 2021
2:00 - 3:00 pm

The Colloq will take place virtually on Zoom
→ [Link to Colloq](#)

Generalizing from sparse data and learning from other people **Robert Bamler**

Professorship for ["Data Science and Machine Learning"](#) at our Cluster of Excellence "Machine Learning"

Scalable Bayesian inference methods and deep probabilistic models combine the principles of statistical machine learning with the expressivity of deep learning. While a lot of recent work focuses on introducing Bayesian inference into existing applications of deep learning, in this talk I will take a different perspective and demonstrate that scalable Bayesian inference allows us to tackle new problems that would be difficult to address with other methods. I will start by presenting a novel inference algorithm called Perturbative Variational Inference, which draws on ideas from theoretical physics. I will then show that such foundational research opens up new frontiers in applied machine learning research, discussing examples from data and model compression, and an outlook on a new approach to the economics of machine learning that is more resilient to an institutional centralization of power.