Einladung
zum Mathematischen Kolloquium

Es spricht am

Montag, den 08.02.2021, um 17:15 Uhr

Prof. Dr. Peter Ochs

(Universität Tübingen)

über das Thema

„First-order Optimization Algorithms for Machine Learning"

Optimization problems in the context of Machine Learning are usually high-dimensional and are naturally modelled as non-smooth optimization problem. This setting requires the development of dedicated optimization algorithms and makes the usage of classical black-box algorithms impractical. Nevertheless, the special structure of the optimization problems allows for efficient optimization with first-order algorithms at the forefront. Such algorithms rely on first order (sub-)derivative information about the objective function with a suitable concept that generalizes differentiation to non-smooth functions. In this talk, we introduce the common structure that is exploited by first-order algorithms for non-smooth optimization problems. We discuss the convergence of so-called Proximal Gradient Algorithms including an analysis of their convergence rates. Moreover, we develop an approach towards generalizing quasi-Newton methods to the regime of non-smooth optimization.

online - wenn Sie Zugang haben wollen, schicken Sie bitte eine Nachricht an Angelika Spörer-Schmidle.