

A cordial invitation to the second talk of the
Brown Bag Seminar
Recent Developments in Data Science:

An Introduction to Distributional Regression

By
Prof. Dr. Thomas Kneib

Date: 23.05.2022 (Monday) 12:00 – 13:30

Location: (WIWI) HS 6

Link and further information: Course 39740 Seminar: Doctoral Seminar "Recent Developments in Data Science" in Stud.IP

Abstract:

In this talk, we discuss a generic framework for Bayesian inference in distributional regression models in which each parameter of a potentially complex response distribution and not only the mean is related to a structured additive predictor. The latter is composed additively of a variety of different functional effect types such as nonlinear effects, spatial effects, random coefficients, interaction surfaces or other (possibly nonstandard) basis function representations. To enforce specific properties of the functional effects such as smoothness, informative multivariate Gaussian priors are assigned to the basis function coefficients. Inference can then be based on computationally efficient Markov chain Monte Carlo simulation techniques where a generic procedure makes use of distribution-specific iteratively weighted least squares approximations to the full conditionals. We will discuss practical aspects of distributional regression along different applications concerning for example the analysis of income inequality in Germany.

Speaker:

Prof Dr. Thomas Kneib

Thomas Kneib is a Professor for Statistics at Georg-August-Universität Göttingen since 2011. He holds a PhD in Statistics from Ludwig-Maximilians-Universität München, Germany. His research interests focus on flexible forms of regression modelling such as semiparametric regression, distributional regression, quantile and expectile regression, generalized additive models, mixed models, and spatial statistics. He is involved in various collaborative research projects and was spokesperson of a research training group on “Scaling Problems in Statistics” from 2011 to 2019. He is spokesperson of Göttingen’s interdisciplinary Centre for Statistics and deputy speaker of Göttingen’s Campus Institute Data Science. He is also dean of research at the Faculty of Business and Economic Science.