



Seminar Series in Statistics and Biostatistics

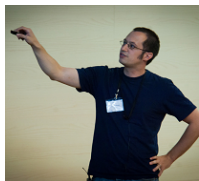
06.11.2018, 14:15 @ Seminar Room 819, Niels Henrik Abels hus, 8th floor

Thomas Kneib: Bayesian Structured Additive Distributional Regression

Abstract: We propose a generic Bayesian framework for 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.

Thomas Kneib

Georg-August-Universität Göttingen (Germany)



Thomas Kneib is Chair of Statistics and Econometrics at the Faculty of Business and Economic sciences of the Georg-August-Universität Göttingen (Germany). His research mainly focuses Mixed model based inference in structured additive regression, Quantile and expectile regression, Distributional regression / generalised additive models for location, scale and shape, Bayesian regularisation priors, Boosting semi-parametric regression models, Spatial statistics, Regression models for categorical responses, Structured hazard regression and Multi-state-models.

Next seminar

20.11.2018 @ 14:15

Thordis L. Thorarinsdottir (Norsk Regnesentral)

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