An introduction to boosting distributional regression

Andreas Mayr

(Vetretungsprofessur am Institut für Statistik, LMU)

May 10, 2017, 16:30
Ludwigstr. 33, Room 144 Munich

Generalized additive models for location, scale and shape (GAMLSS or simply distributional regression) are a popular statistical modelling approach that, in contrast to conventional generalized additive models (GAMs), regress not only the expected value but every distribution parameter to a set of covariates.
Boosting algorithms, on the other hand, emerged from the field of machine learning and were later adapted to estimate the unknown quantities of statistical models. Methodologically, these statistical boosting algorithms bridge the gap between two rather different points of views on how to gather information from data: on the one hand, there is the statistical modelling community that focuses on models describing and explaining the outcome in order to find an approximation to the underlying stochastic data generation process. On the other hand, there is the machine learning community that focuses primarily on algorithmic models predicting the outcome while treating the nature and the structure of the underlying process as unknown. This talk aims at giving a non-technical introduction to boosting algorithms in general and the boosting of GAMLSS in particular. Possible advantages are illustrated by the analysis of the health related quality of life from chronic kidney disease patients.