Statistics and Risk Management Seminar

Department of Mathematics, NOVA MATH/FCT NOVA

Title: Using R Shiny for teaching statistical methods

Speaker: Alexandra Daub, Lars Knieper & Sophie Potts, Georg-August-University, Goettingen, Germany

Date | Time: March 19, 2025 | 14h00

 Zoom: https://videoconf-colibri.zoom.us/j/88333359956

Abstract: It is challenging to introduce statistical concepts to a heterogeneous student population with diverse backgrounds. Visualizations are often used in lectures and associated exercises. As these are usually done on lecture slides or (digital) notes, they remain static. In addition, the immediate programming of statistical concepts is a hindrance for students, as usually a basic understanding of the methodology is needed in advance.
In order to provide interactive visualizations combined with explanations and further give the opportunity to adjust parameters of statistical methods, webapps for teaching purposes are developed. Therefore, the R-Shiny framework is employed. It enables users to program interactive web apps directly with R while still being flexible enough to incorporate HTML, Javascript and CSS. It offers the potential to teach statistical concepts visually and interactively. Further, students are able to get a low-barrier intuition of statistical concepts before programming and applying these themselves.

Short Bio: Alexandra Daub, Lars Knieper and Sophie Potts are PhD students at the Chair of Spatial Data Science and Statistical Learning led by Prof. Dr. Elisabeth Bergherr at the University of Goettingen (Germany). Alexandra Daub and Lars Knieper both work on gradient-based boosting methods for estimating statistical models, with Lars Knieper focusing on the estimation of random and spatial effects and Alexandra Daub on generalized additive models for location, scale and shape. Sophie Potts is working on statistical modelling (currently a joint model for longitudinal and time-to-event data) with a special focus on their application in social sciences. During the first years of their PhDs, all three worked on a project on digital teaching material, which founded the chair's collection of Shiny applications. Both, their in-class teaching activities as well as the work on digital teaching material encompasses various areas of statistics including undergraduate statistics, statistical inference, spatial statistics and multivariate statistics.

Organizers: Mina Norouzirad & Isabel Natário