**Course Name：**Data Science and Analytics

**Course Duration:** 5 sessions in August. Each session starts at 3:00 PM Beijing time and lasts about 2 hours.

**Online Mode:** Zoom

**Course Introduction:**

The course provides an introduction to data science emphasising statistical and machine learning. After a general introduction we will study several supervised learning methods, their foundations and their application with exercises using R. The methods handled in the course cover linear regression, linear classification, model assessment and selection, non-linear methods for regression and classification, in particular splines and generalised additive models, decision tree methods, support-vector machines, boosting and ensemble learning, and deep neural networks.

**5 Sessions Schedule:**

Session 1a. Introduction to Statistical Learning and Data Science  
Session 1b. Linear Regression  
Session 2a. Model Assessment and Inferencing  
Session 2b. Linear Classification  
Session 3. Non-Linear Methods  
Session 4a. Tree-Based Learning Methods  
Session 4b. Support Vector Machines  
Session 5. Neural Networks

**Lecturer:** Prof. Klaus-Dieter Schewe

**Introduction of the Lecturer:**

Professor (CS) at Zhejiang University, UIUC Institute, PhD in Mathematics (U Bonn), DSc in Computer Science (BTU Cottbus), formerly Professor at TU Clausthal, Massey University, JKU Linz and CEO/CSO of Software Competence Center Hagenberg.