



Organization

Venue

The course will take place in Heidelberg at the University Campus 'Im Neuenheimer Feld'.

Registration

Deadline for registration is October 24, 2019.

Course fee

The fee for the course is € 645; discounted rate for affiliated with a university € 430.

Cancellation

The cancellation policy is as follows, 75% refund for cancellations after October 31, no refund for cancellations after November 7, 2019.

Attendee substitutes may be made at any time.

Public Transport

Costs and schedule: www.vrn.de

Information

<http://www.biometrie.uni-heidelberg.de/datascience>

Concept and Contents

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Contact

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**MEDIZINISCHE
FAKULTÄT
HEIDELBERG**

Regression Methods

14.11. - 16.11.19



Aims

Course participants will be able to:

- Understand linear regression and its extensions
- Know the limitations of these procedures
- Evaluate different models
- Know techniques for variable/model selection
- Apply these methods in R

Course content

The course will cover following topics:

- Linear and nonlinear regression (exponential family, link function)
- Variable or model selection methods (Subset selection, forward, backward, and stepwise selection)
- Model evaluation (Akaike/Bayesian Information Criterion (AIC, BIC), Deviance, Mallow' Cp, Mean squared error, Brier Score)
- Resampling methods (Bootstrapping, jackknife, cross-validation)
- Implementation in R

Pre-requisites

The participants must have

- Basic knowledge of statistics and probability theory
- Basic knowledge in R

Schedule

Thursday

9:00 – 10:30 Linear Regression I

11:00- 12:30 Linear Regression II

13:30-15:00 Model Evaluation

15:30-17:00 Resampling Methods

Friday

9:00 – 10:30 Generalized Linear Models I

11:00- 12:30 Generalized Linear Models II

13:30-15:00 Variable Selection

15:30-17:00 Mixed Models

Saturday

9:00 – 10:30 Survival Analysis I

11:00- 12:30 Survival Analysis II

Number of Participants

The number of participants is limited to 20 per course.

Course instructors

Maximilian Pilz, IMBI Heidelberg

Dorothea Weber, IMBI Heidelberg

Further lecturers

Samuel Kilian, IMBI Heidelberg

Dr. Johannes Krisam, IMBI Heidelberg

Further reading

L. Fahrmeier, T. Kneib, and S. Lang. Regression: Modelle, Methoden und Anwendungen. 2. Auflage Springer, 2009.

P. McCullagh and J. Nelder. Generalized Linear Models, Second Edition. Chapman & Hall/CRC Monographs on Statistics & Applied Probability. Taylor & Francis, 1989.