MEDICAL
DATA SCIENCE

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REGRESSION METHODS

COURSE CONTENT

Course participants will be able to:

- Understand linear regression and its extensions
- Know the limitations of these procedures
- Use resampling models and evaluate regression models
- Apply these methods in R

The course will cover following topics:

- Linear models and generalized linear models
- Resampling methods (Bootstrapping, jackknife, cross-validation) including selected model evaluation measures
- Mixed models for dependent data
- Techniques of survival analysis
- Implementation in R

SCHEDULE*

- Thursday 09:00 – 17:00, Friday 09:00 – 17:00, Saturday 09:00 – 12:30

PRE-REQUISITE

The participants must have basis knowledge in:
- statistics, linear algebra, and probability theory
- R (data manipulation base R /tidyverse)

BASIS READING

- L. Fahrmeier, T. Kneib, and S. Lang. Regression: Model-le, 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.

REGISTRATION

- Deadline for registration is 3 weeks before.
- The fee for the course is €645; discounted rate for affiliated with a university € 600.
- The courses may take place in parts or as a whole online (virtual conferences) if in-classroom teaching is not possible.

*subject to change