Organization

Venue
The course takes place as an online course.

Registration
Deadline for registration is October 8, 2020.

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

Cancellation
The cancellation policy is as follows: 100% refund for cancellations till October 14; 75% refund for cancellations between October 15 and October 21; no refund for cancellations after October 22, 2020.

Attendee substitutes may be made at any time.

Information
http://www.biometrie.uni-heidelberg.de/datasciencia

Concept and Contents
University of Heidelberg
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Working with Data, Plotting, Reproducibility and Presentation

29. - 31. October 2020
Aims
Course participants will be able to:

- import data from a wide variety of sources in the R-environment
- manipulate data to obtain a dataset that can be used for machine learning tasks
- visualize data using a systematic, grammar-based approach
- generate offline reports
- control the versions of the work using Git
- generate interactive reports using the Shiny technology

Reproducibility:
- Why reproducible research is essential to good scientific practice
- RMarkdown, knitr, and Sweave for automatic report generation
- Version control using Git

Presentation:
- Offline reports (‘knitr’, ‘rmarkdown’ package)
- Web presentation using Shiny

Pre-requisites
- Basic R programming skills
- R Studio installed

Course content
The course will cover following topics:

Working with data:
- Importing data from various sources (SAS, SPSS) (‘haven’ package)
- Visualizing data using a ‘Grammar of Graphics’ (‘ggplot2’ package)
- Modern data transform (‘dplyr’ package)
- Basics of relational data and “tidy” data (‘tidyr’ package)

Schedule
Thursday (29th of October)
9:00 – 10:30  Data Manipulation I
11:00 – 12:30 Data Manipulation II
13:30 – 15:00 Data Visualization I
15:30 – 17:00 Data Visualization II

Friday (30th of October)
9:00 – 10:30  Reproducible Reports I
11:00 – 12:30 Reproducible Reports II
13:30 – 15:00 Version Control with Git I
15:30 – 17:00 Version Control with Git II

Saturday (31st of October)
9:00 – 10:30  Interactive reports with Shiny I
11:00 – 12:30 Interactive reports with Shiny II

All parts include practical exercises. Please preinstall R Studio on your laptop.

Number of Participants
The number of participants is limited to 20 per course.

Course instructor
Maximilian Pilz M.Sc., IMBI Heidelberg

Further instructors
Lukas Baumann M.Sc., IMBI Heidelberg
Samuel Kilian M.Sc., IMBI Heidelberg
Jan Meis M.Sc., IMBI Heidelberg
Johannes Vey M.Sc., IMBI Heidelberg