Course Catalog

Comelio

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a. Locations

Our trainings take place at various locations in the German-speaking countries.

Public trainings:

You can enroll for public trainings at our training centers across Germany like in Berlin, Dresden, Hamburg, München / Munich, Düsseldorf, Frankfurt, and Stuttgart. Not all public trainings will be organized in all cities but you can still book a particular training for your team in one of our training and conference centers.

In Austria you can attend seminars and trainings in Wien / Vienna while we offer training dates in Switzerland in Zürich / Zurich.

On-site trainings:

We have mobile and flexible trainers / lecturers who like to visit you and your team for an on-site training or a training in a conference center or hotel near you.

USA

Chicago	Tel: Fax:
Miami	Tel:+1.305.395.7962 Fax:+1.305.395.7964
New York	Tel:+1.212.380.1181 Fax:+1.305.395.7964

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1. Visualization

A. R

(i) Graphical analysis of spatiotemporal data

Overview

Course ID	1000027
Language	en
Duration	2 D ys
Delivery mode	Classroom
Course Type	
Target Group	Data Analysts
Prerequisites	Basics in R and Statistics
Method	Presentation with examples and hands-on labs.
Course level	Beginning

Course Dates

Chicago	Miami	New York
1,850.00 USD	1,800.00 USD	1,850.00 USD
20-21 Aug 08-09 Oct 26-27 Nov	06-07 Aug 24-25 Sep 12-13 Nov	13-14 Aug 01-02 Oct 19-20 Nov

Prices plus local taxes.

Course Description

Space-time datasets are indexed both in space and in time. Their one- or two-dimensional analysis will typically start displaying the data in diagrams revealing the inner nature and relationships of the underlying variables. This training is organized into three parts, each devoted to different types of data. Each part comprises several topics and hands-on labs according to the various visualization methods or data characteristics. In the first part of the training, you will see how you can visualize time series data by using packages like zoo and xts for the analysis of time series data and packages like ggplot2, latticeExtra, and googleVis for their presentation. The next part of the training focuses on visualisation techniques for spatial data and presents packages like raster, rasterVis, maps, and googleVis. The third and last part finally combines variables which measure time and spatial data and teaches you how to create diagrams for such complex datasets.

Course Outline

A. Visualization of Time Series

(0.75 Days) Introduction to Displaying Time Series - Time on the Horizontal Axis - Time as a Conditioning or Grouping Variable - Time as a Complementary Variable - R Packages for time series data: zoo and xts - R Packages for visualization: ggplot2, latticeExtra, and googleVis

B. Visualization of Spatial Data

(0.75 Days) Introduction to Displaying Spatial Data - Thematic Maps: Proportional Symbol Mapping, Choropleth Maps, Raster Maps, Vector Fields - Reference and Physical Maps - Packages for working with OpenStreetMap - R Packages for spatial data: sp, maptools, gstat, and rgdal - R Packages for visualization: raster, rasterVis, maps, and googleVis

C. Visualization of Space-Time Data

(0.5 Days) Introduction to Displaying Spatiotemporal Data - Spatiotemporal Raster Data - Spatiotemporal Point Observations - R Package spacetime for spatiotemporal data

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(ii) Statistical Analysis with Graphics using R

Overview

Course ID	1000024
Language	en
Duration	4 D ys
Delivery mode	Classroom
Course Type	
Target Group	Data Analysts
Prerequisites	Basic knowledge of statistics
Method	Lecture with examples and exercises.
Course level	Advanced

Course Dates

Chicago	Miami	New York
2,400.00 USD	2,250.00 USD	2,400.00 USD
27-30 Jul 07-10 Sep 19-22 Oct 30 Nov - 03 Dec	24-27 Aug 05-08 Oct 16-19 Nov 28-31 Dec	31 Aug - 03 Sep 12-15 Oct 23-26 Nov

Prices plus local taxes.

Course Description

Graphics can effectively complement statistical data analysis in various ways. Successful graphics arise from a combination of good design and good implementation. This training explores mainly two R packages for statistical graphics: lattice and ggplot2. The lattice package extends the R language by providing a coherent set of tools to produce statistical graphics with an emphasis on multivariate data. ggplot2 is an R package for producing statistical, or data, graphics, but it is unlike most other graphics packages because it has a deep underlying grammar. This makes ggplot2 very powerful, because you are not limited to a set of pre-specified graphics, but you can create new graphics that are precisely tailored for your problem. The training is divided into two parts, with the first being an introduction to the development of graphics using the lattice package and the second one using the ggplot2 package for similar visualizations but also far more complex and more sophisticated visual analyses.

Course Outline

A. Introduction to graphics in R

(0.25 Days) Introduction to the lattice package - Multipanel conditioning - The "trellis"" object and its properties: the formula, data, conditioning and various plots/tiles in one diagram - Dimension and physical layout - Grouped displays - Annotation: Captions, labels, and legends

B. Graphics for Univariate Distributions

(0.75 Days) Density Plot - Histograms - Normal Q–Q plots - The empirical CDF (Cumulative Distribution Function) - Box-and-whisker plots - Strip plots - Working with small and large datasets

C. Graphics for Multivariate Distributions

(0.5 Days) Displaying Multiway Tables: Dot plots, Bar charts, Visualizing categorical data - Scatter Plots and Extensions - Trivariate Displays: Three-dimensional scatter plots, Surfaces and two-way tables

D. Advanced Graphical Parameters of the lattice Package

(0.5 Days) The parameter system: Themes and devices - Plot Coordinates and Axis Annotation: Axis annotations (ticks and labels), Limits and aspect ratio, Scale components and the axis function, Labels and Legends - Data Manipulation: Combining data sources, Subsetting, Ordering levels of categorical variables, Manipulating the "trellis" Object

E. Introduction to graphics using ggplot2

(0.5 Days) Datasets - Basic use - Colour, size, shape and other aesthetic attributes - Plot geometries - Components of the layered ggplot2 grammar: Layers, Scales, Coordinate system, Faceting

F. Visualization in ggplot2

(1 Day) Layers - Overall layering strategy - Aesthetic mappings - Creating a plot - Basic plot types - Displaying distributions - Dealing with overplotting - Surface plots - Drawing maps - Revealing uncertainty - Statistical summaries - Annotating a plot

G. Optimizing plots for publication and presentation

(0.5 Days) Themes - Customising scales and geoms - Multiple plots on the same page

b. Disclaimer

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