Programming Tools and Technologies for Data Science

Postgraduate Course

Part A) The R Language

Introduction to the R language. Basic Operators. Basic Types and Classes of Objects. Vectors, Matrices, Lists and Data-Frames. Basic Built-In Functions in R. Importing and Exporting Data. Writing Functions in R. Basic Statistics with R. Distributions in R and Simulations. Plots in R. The Data-Table Object for fast subset, grouping, update, sorting and aggregation of large data-sets. The R Package GGPLOT2 for Creating Elegant Data Visualizations. Applications.

Bibliography

Crawley, M.J. (2007). *The R Book*. Wiley. New York.

Dalgaard, P. (2002). *Introductory Statistics with R*. Springer-Verlag, New York.

Chang, W. (2013). *R Graphics Cookbook: Practical Recipes for Visualizing Data*. O'Reilly Media, Sebastopol, California.

Chiu, D. (2016). *R for Data Science Cookbook*. Packt Publishing, Birmingham, UK.