

iWebPlots: Introducing a new *R* package for the creation of interactive web-based scatter plots

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Scatter plots constitute a most widely-used tool employed to investigate the correlations underlying a dataset. Nowadays, the demand for online data visualization in addition to the increasing need for availability of dynamic features and interactions, necessitate the construction of interactive web graphics.

The **iWebPlots** package simplifies the implementation of interactive web-based scatter plots, generated directly via the *R* statistical environment. The package's functions take as input a matrix of coordinates with associated metadata and generate a bitmap image with an HTML wrapper. Interactivity is implemented using the fundamental HTML image map technology, so no additional software such as applets or plug-ins is required. Developers can easily modify and expand the generated HTML pages, or incorporate them into web applications; thus, great extensibility is ensured.

Additional features include dynamic tooltips and text annotations as well as asynchronous alternation between two- and three-dimensional scatter plots. Furthermore, each plot can be interlinked with a fully interactive data table, which displays more information about the data in the plot.

The **iWebPlots** package has been used to develop the web front-end of a multivariate analysis pipeline, featuring techniques such as Principal Component Analysis (PCA) and k-means clustering, among many others. This work was carried out as part of the SYMBIOSIS-EU project, funded by European Commission Framework 7.

References

SYMBIOSIS-EU (2011), <http://www.symbiosis-eu.net/>