Interactive Exploratory Data Visualization in R
A workshop introduction to loon and related packages

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Exposure, the effective laying open of the data to display the unanticipated, is to us a major portion of data analysis.
John Tukey and Martin Wilk (1966)

This workshop will demonstrate the power of highly interactive visualization tools in exploratory data analysis. Through a variety of hands-on analyses in R, workshop participants will develop a facility for interactive exploratory data visualization using loon and related R packages.

loon is an interactive visualization toolkit for analysts/users/developers engaged in open-ended, creative, and possibly unscripted data exploration. Loons base set of plots include scatterplots, histograms, barplots, pairs plots, parallel and radial axes plots, graph structures, and any combination of these.

Among the topics that will be covered are the following

- interactive histograms, scatterplots, and 3d scatterplots

- data query by selection across linked displays

- brushing scatterplots and histograms

- conditional analysis by linking, by facetting, or both

- interactive parallel (and radial) coordinate plots

- connecting interactive graphics with pipes

- interactive graphics and the R grid package

- turning ggplots into interactive loon plots

- using interactive graphics to teach statistics

In this workshop, participants will become familiar with loons functionality through a series of examples and hands-on exercises. These will cover a wide spectrum of applications beginning with data analysis, including high-dimensional exploratory data analysis, methodological exploration for the classroom or research, as well as exploratory prototyping of new interactive visualizations.

All R code will be provided. No previous exposure to interactive graphics or loon is expected. Even participants who have never used R will be able explore data using loon and will get some appreciation of the value of interactive data visualization. The main personal requirement is an interest in data and its exploration.

Participants will of course need access to their own computer and (ideally) two screens (or one really big one). You do need to check and prepare your computing environment prior to the workshop.