Looking beyond the horizon: Evaluation of four compact visualization techniques for time series in a spatial context

Manuel Dahnert, Alexander Rind, Wolfgang Aigner, and Johannes Kehrer

Evaluation Scripts

Supplementary Material

The statistical evaluation of the collected results was performed using the programming language R.

The collected data is stored in *[rawdata_study.csv]*, which is also part of the supplementary material.

We first evaluate the demographic information given by the participants *[eval-demography].*

To bootstrap the evaluation, there is for each dependent variable of the study design (*completion time, error, confidence, difficulty*) one script that runs the following tests *[e.g. eval-timings].*

Each dependent variable was checked for normal and log-normal distribution visually (using histograms and QQ plots) and statistically (using Shapiro-Wilk tests) *[e.g. eval-errors-normality].*

After that summary statistics and boxplots for each task and technique were generated *[e.g. eval-confidence-summary].*

For the variables *error, confidence and difficulty* neither normal nor log-normal distrubition could be assumed. Therefore, non-parametrics statistical tests for repeated-measures were used.

In case of *completion times*, where log-normality could be assumed, we performed parametric tests for repeated-measures *[e.g. eval-difficulty-nht].*

The evaluation scripts rely on multiple other R packages, which needs to be installed and included.