ToOoOlTiPs: An R Package for Customizable Tooltips in Interactive Graphics

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Abstract An abstract of less than 150 words.

Introduction

Interactive graphics is a type of visualization that allows users to interactively inspect a plot. One of the most basic interactivity is through tooltips, where users can request additional information about a plot element by mouse hovering ...

This paper will first review some R packages on interactive graphics and their tooltip implementations. Next, a new package **ToOoOlTiPs** will be proposed for customizing tooltips. Some gallery plots will then be given to showcase how these tooltips help users to better read the graphics.

Literacture review

Some packages on interactive graphics include **plotly** (Sievert, 2020) that interfaces with Javascript for web-based interactive graphics, **crosstalk** (Cheng and Sievert, 2021) that specializes cross-linking elements across individual graphics. The recent R Journal paper **tsibbletalk** (Wang and Cook, 2021) provides a good example of including interactive graphics into an article for the journal. This has both a set of linked plots, and also an animated gif example, illustrating linking between time series plots and feature summaries.

Customizing tooltip design with ToOoOlTiPs

ToOoOlTiPs is a packages for customizing tooltips in interactive graphics, it features ...

A gallery of tooltips

We first show a baseline plot, in Figure 1, made by the **plotly** package with **palmerpenguins** data (Horst et al., 2020).

```
p <- penguins %>%
  ggplot(aes(x = bill_depth_mm, y = bill_length_mm,
             color = species)) +
  geom_point()
ggplotly(p)
```

Now we will re-create the same plot using the **ToOoOlTiPs** package for different tooltips designs ...

Summary

We have displayed various tooltips that are available in the package **ToOoOlTiPs**. These tooltips ...

Bibliography

J. Cheng and C. Sievert. *crosstalk: Inter-Widget Interactivity for HTML Widgets*, 2021. URL https://CRAN.R-project.org/package=crosstalk. R package version 1.1.1. [p1]

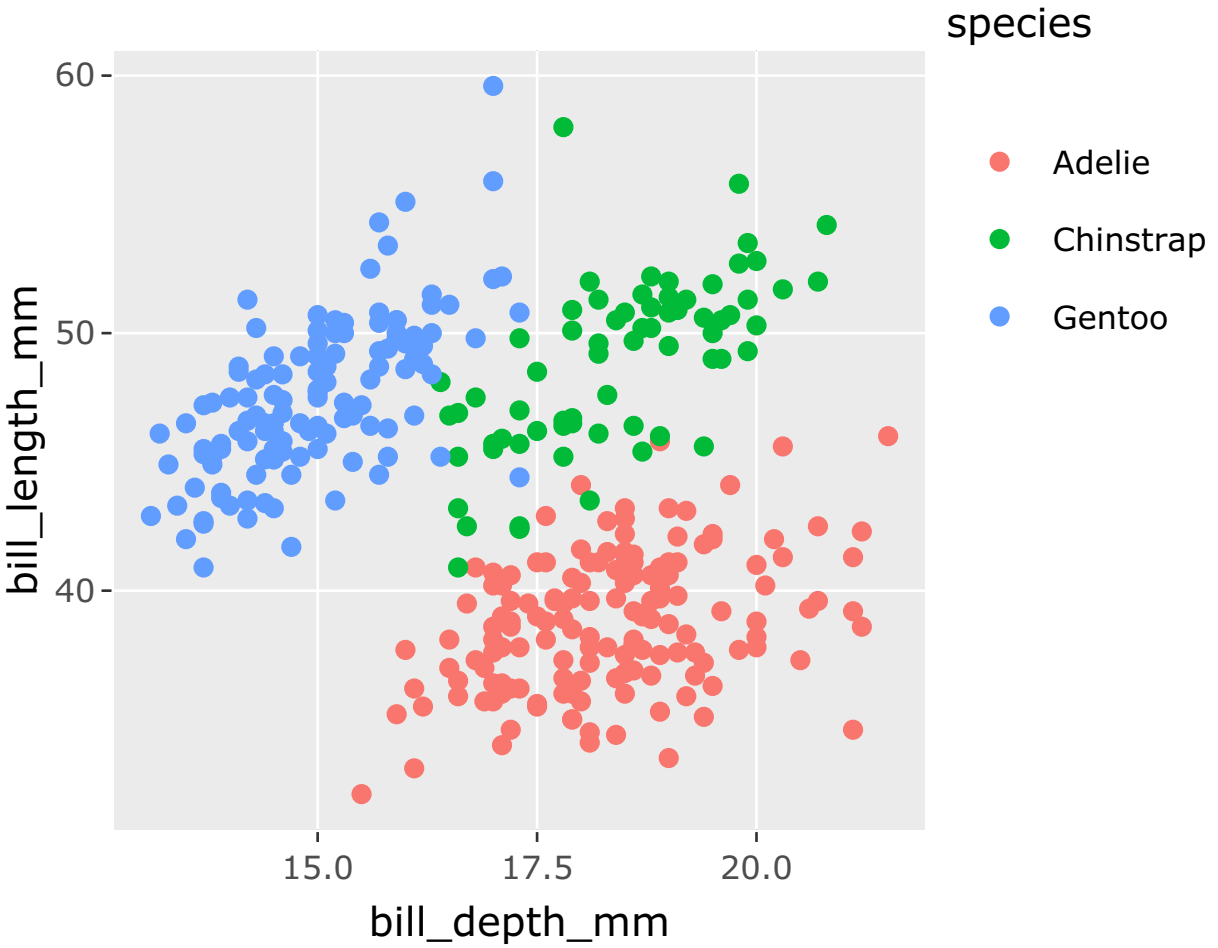

Figure 1: A basic interactive plot made with the plotly package on palmer penguin data. Three species of penguins are plotted with bill depth on the x-axis and bill length on the y-axis. When hovering on a point, a tooltip will show the exact value of the bill depth and length for that point, along with the species name.

A. M. Horst, A. P. Hill, and K. B. Gorman. *palmerpenguins: Palmer Archipelago (Antarctica) penguin data*, 2020. URL https://allisonhorst.github.io/palmerpenguins/. R package version 0.1.0. [p1]

C. Sievert. *Interactive Web-Based Data Visualization with R, plotly, and shiny*. Chapman and Hall/CRC, 2020. ISBN 9781138331457. URL https://plotly-r.com. [p1]

E. Wang and D. Cook. Conversations in time: interactive visualisation to explore structured temporal data. *The R Journal*, 2021. doi: 10.32614/RJ-2021-050. URL https://journal.r-project.org/archive/2021/RJ-2021-050/index.html. [p1]

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