

# 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.

## Literature 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, and most recently, **tsibbletalk** (Wang and Cook, 2021) for working with time series data in a tsibble structure ...

## 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)
```

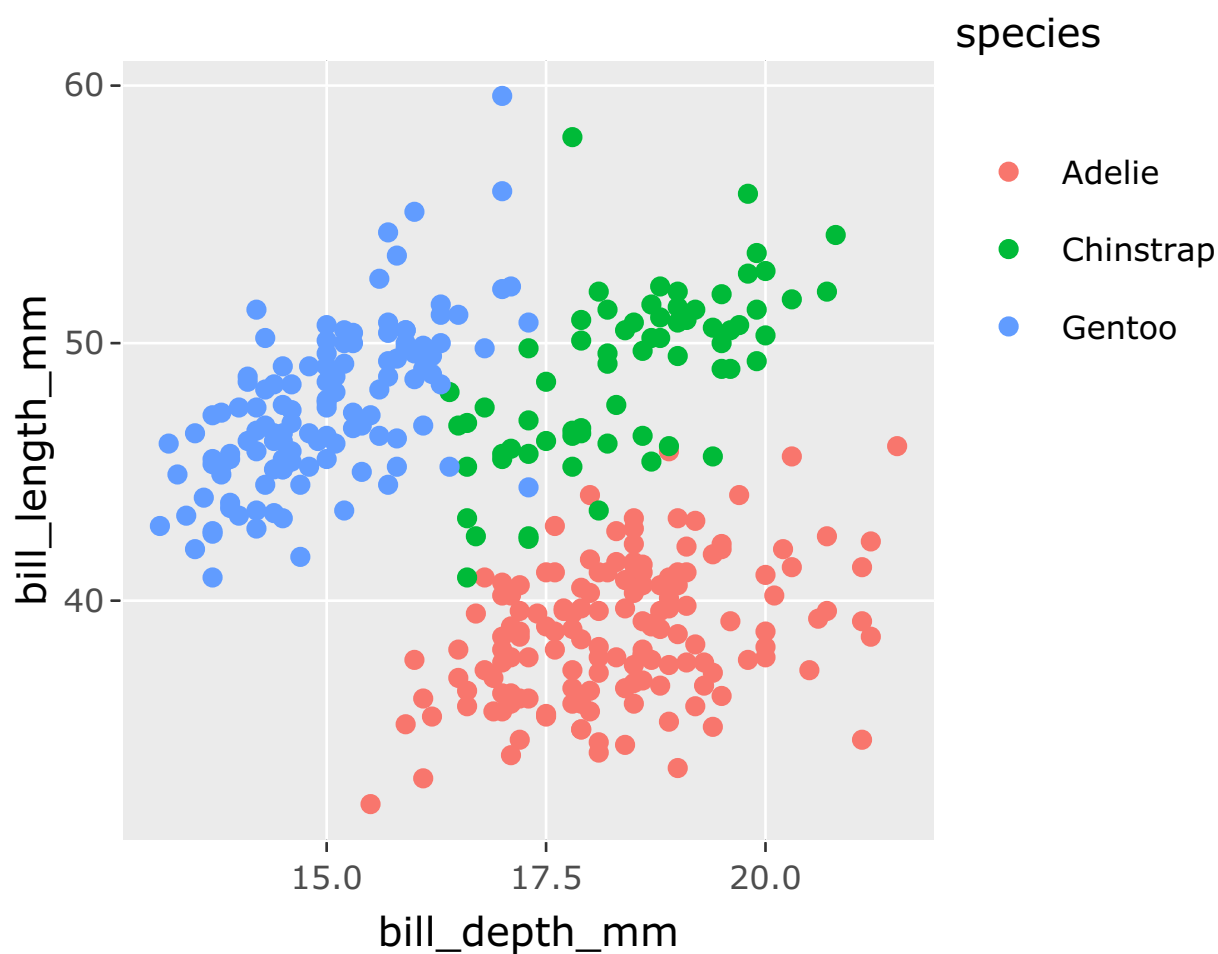
Now we will re-create the same plot using the **ToOoOlTiPs** package for different tooltips designs ...

## 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]
- 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]



**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.

- 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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