The R Graph Gallery

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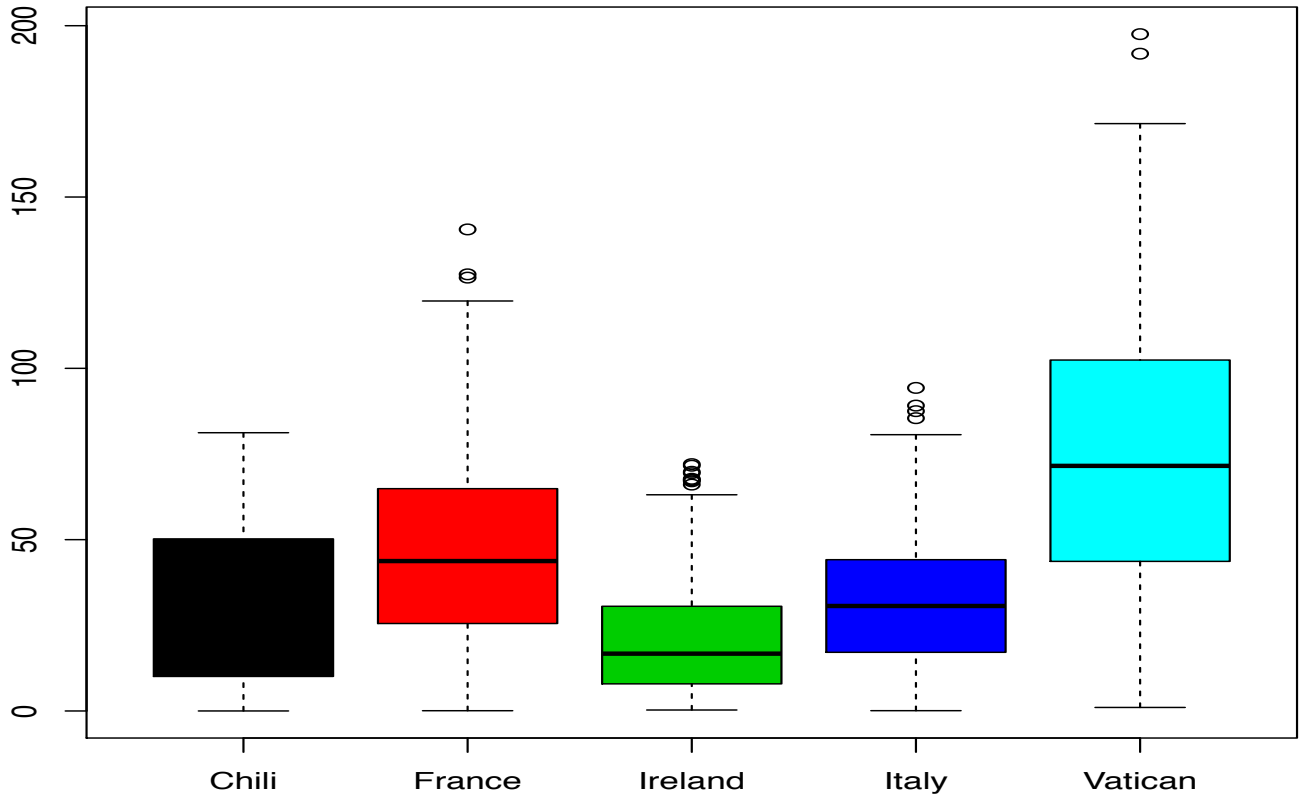
A quick basic graph

names	country	drink
Chelsea	France	45.629739
Marissa	Ireland	5.906875
Mara	France	36.089158
A'Tiana	Chili	13.052119
…	…	…
Fardowsa	Ireland	5.573123
Makayla	Vatican	83.58251

+

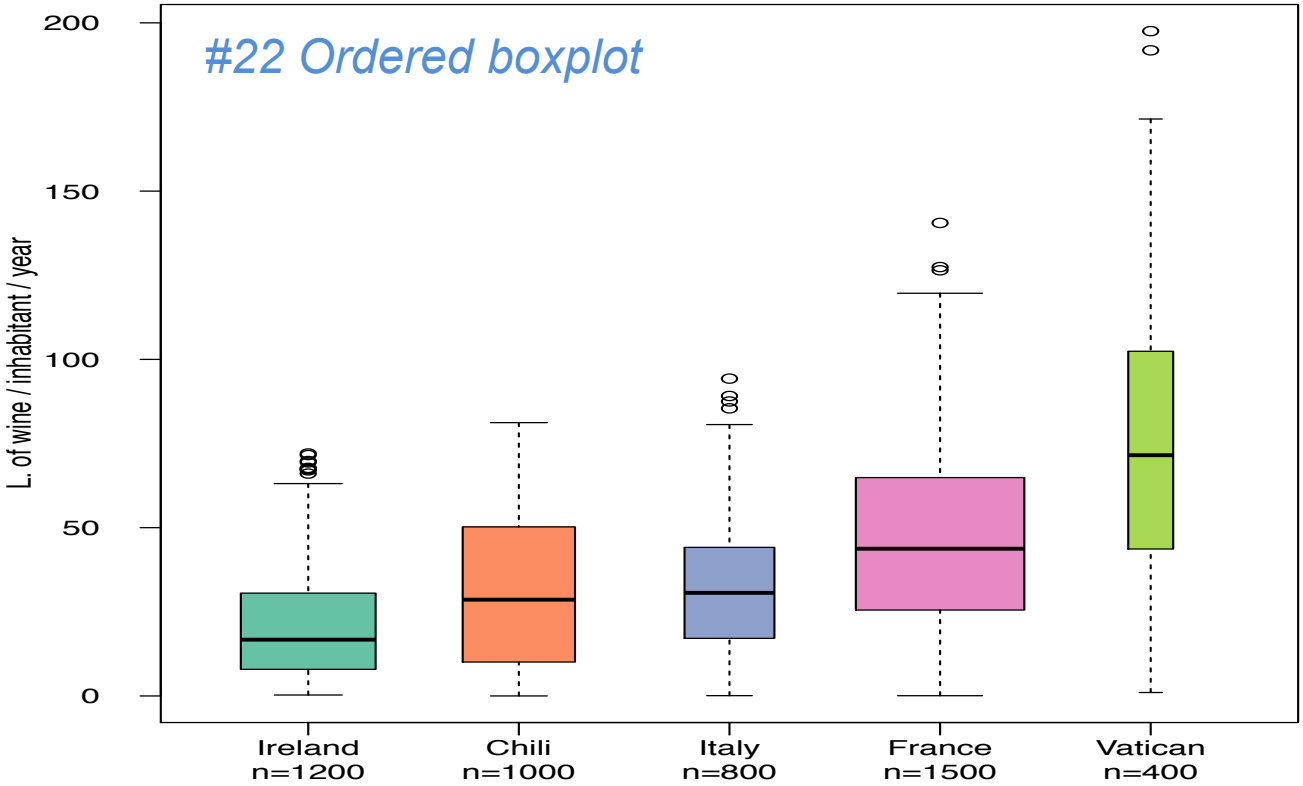
```
boxplot(data$drink ~ data$country, col=c(1:5) )
```



- R = high efficiency to produce simple graphics.
- But more work is needed for an attractive communication

… the custom version!

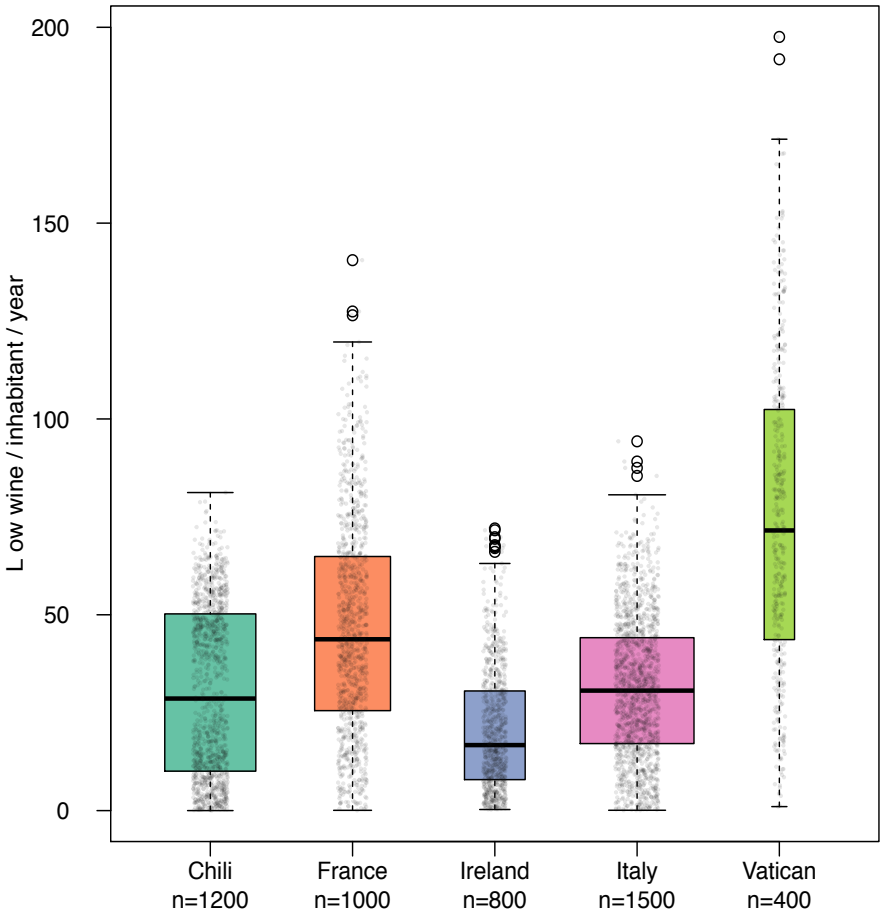
```
library("RColorBrewer")
par(mgp=c(3,1.5,0) , mar=c(4,5,2,2) )
proportion=table(data$country)/nrow(data)
new_order <- with(data, reorder(country , drink, median))
boxplot(data$drink ~ new_order  , ylab="L. of wine / inhabitant / year" , col=brewer.pal(5, "Set2") , las=1 ,
width=proportion, xaxt="n" )
axis(1, at=c(1:5) , labels=paste(levels(data$country),table(data$country),sep="\nn=")  )
```



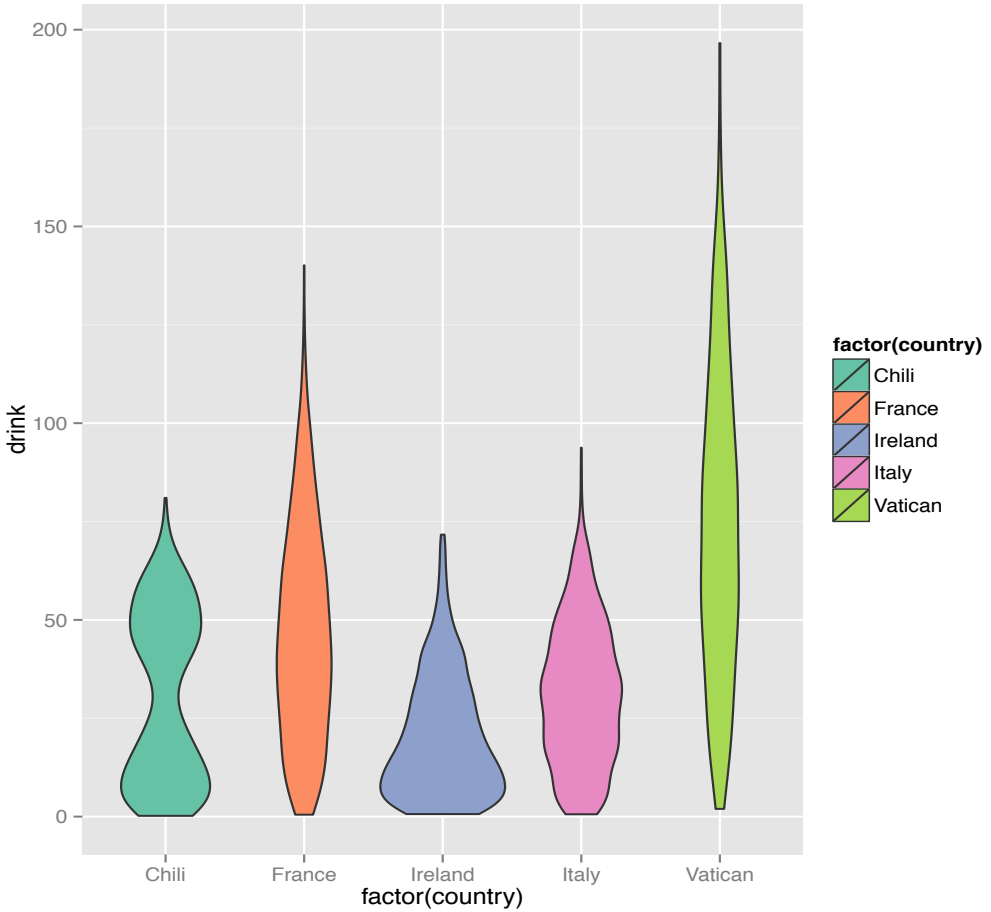
- Better graph=better understanding
- Hard to remember every option!

Dataviz is a science

#96 Boxplot with jitter

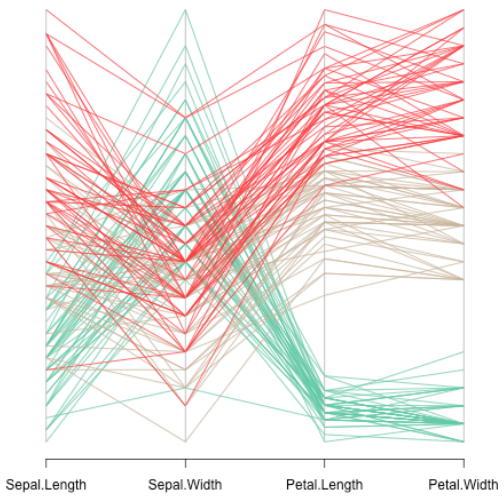


#95 Violin Plot

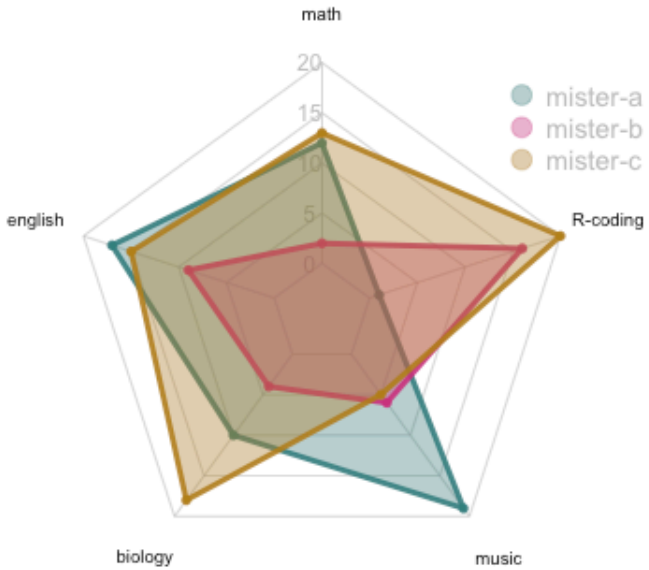


- DataViz is not only aesthetic!
- Do you know every chart possibility?

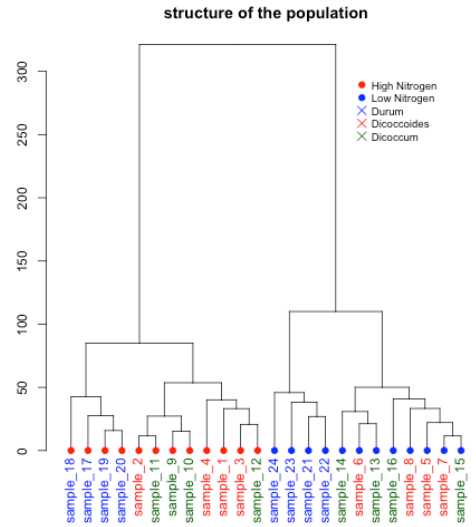
A world of possibilities



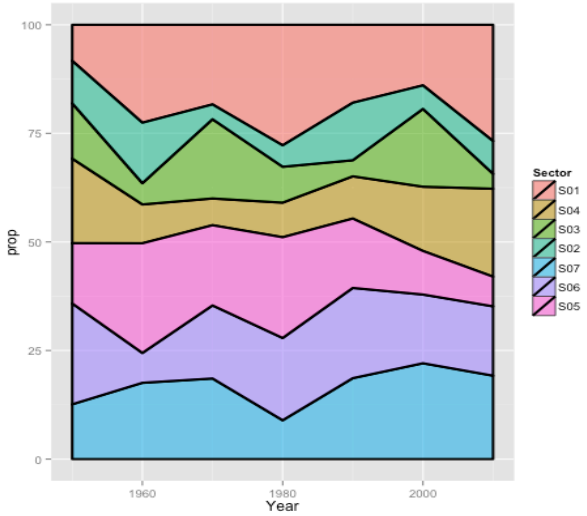
#93 Parallel plot



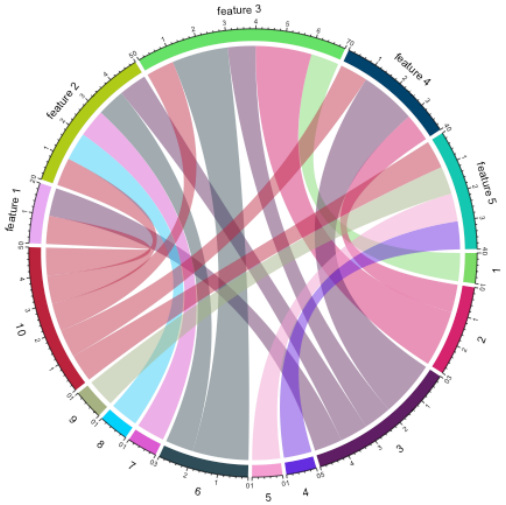
#143 Spider Graph



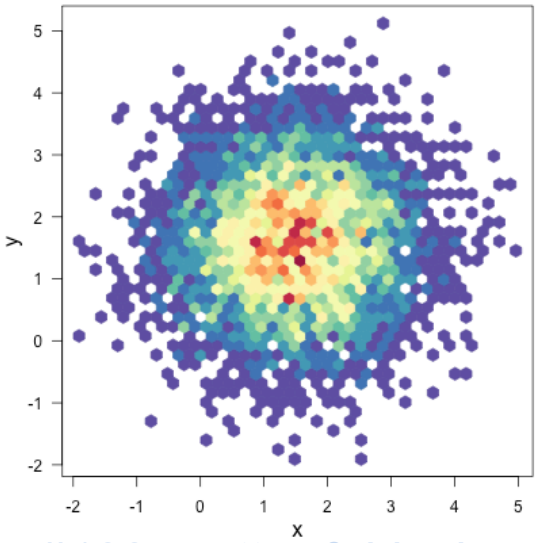
#31 Clustering tree



#136 Stacked area



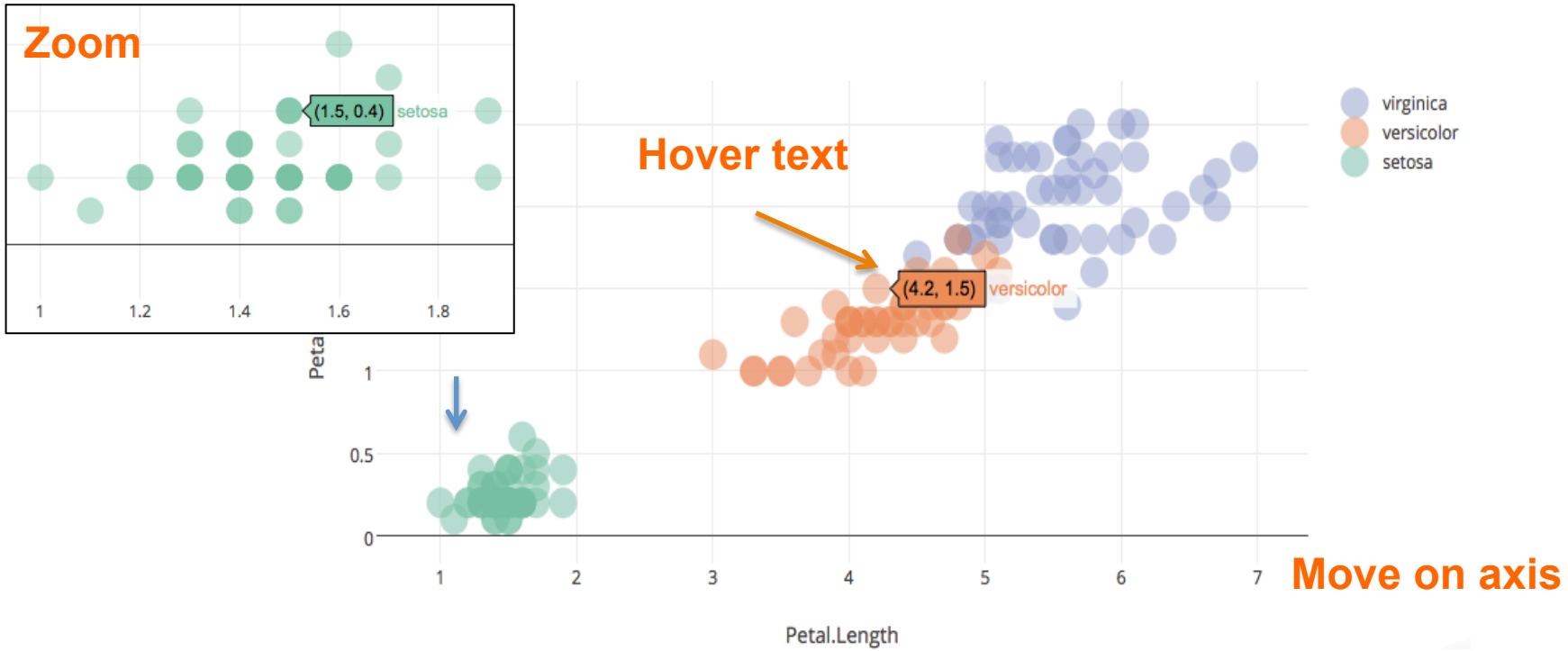
#123 Circular plot



#100 scatter & binning

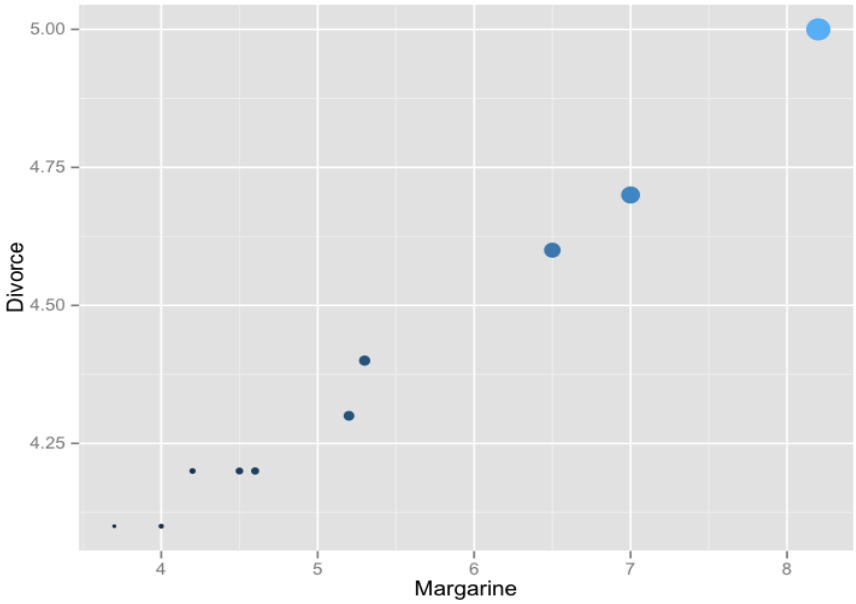
Next step: Interactive plots with the HTML widgets

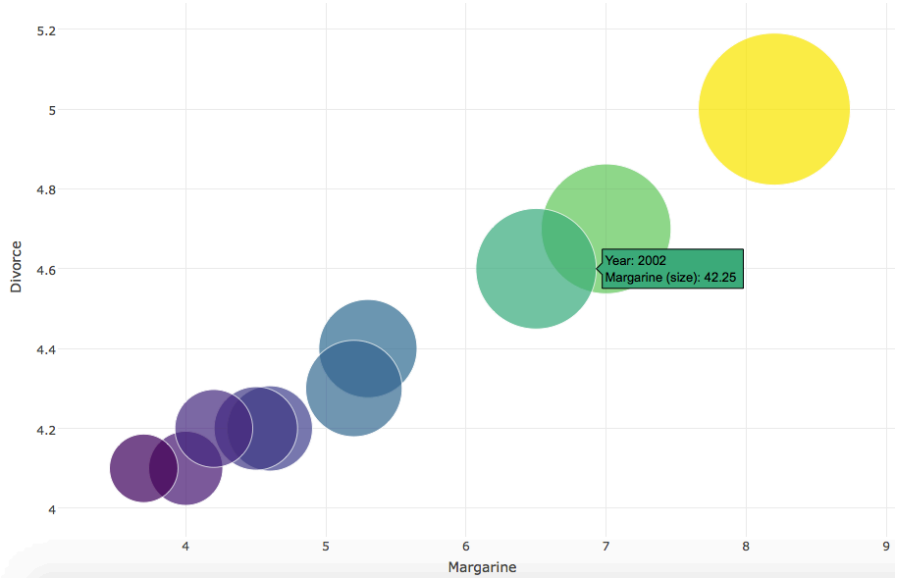
HTML widgets: Dygraph - Leaflet - Plotly - rbokeh - visNetwork - networkD3 - DataTables - Threejs - Rglwidget - DiagrammeR - HighCharter - MetricsGraphics – www.htmlwidgets.org/



- Interactivity=better access to information
- Bring your data to life!
- Interactivity with R is easy

Plotly






```
qplot(
        data=data, x=Margarine, y=Divorce,
        colour = Margarine,
        size=Margarine
)
```

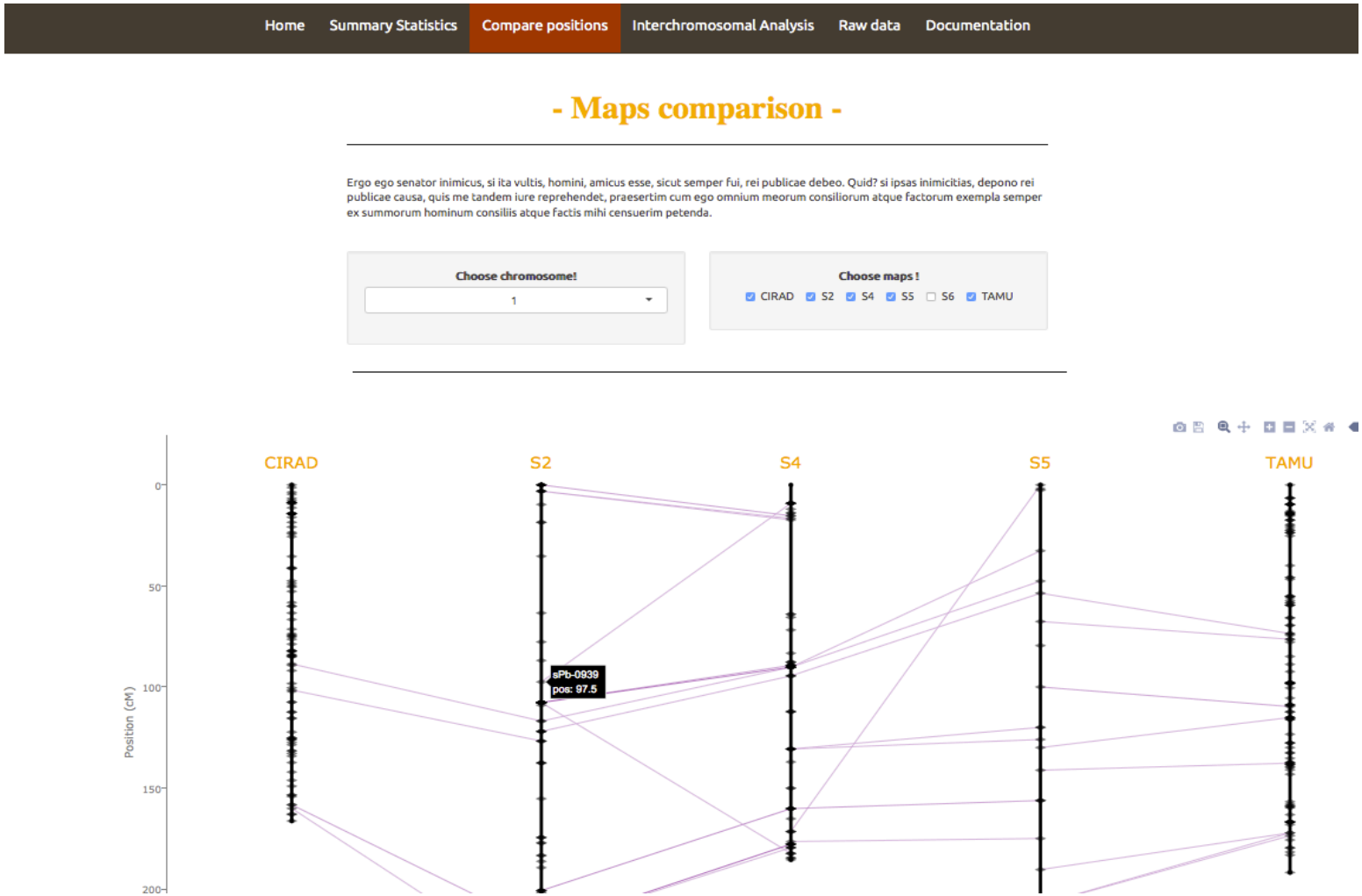
```
plot_ly(
        data, x=Margarine , y=Divorce ,
        size=Margarine,
        color=Margarine,
        mode="markers" ,
        text=paste("Year: ",year,sep="") ,
        hoverinfo="text"
)
```

- Plotly : syntax is close to ggplot2
- Possibility to share your graphics

http://www.tylervigen.com/spurious-correlations

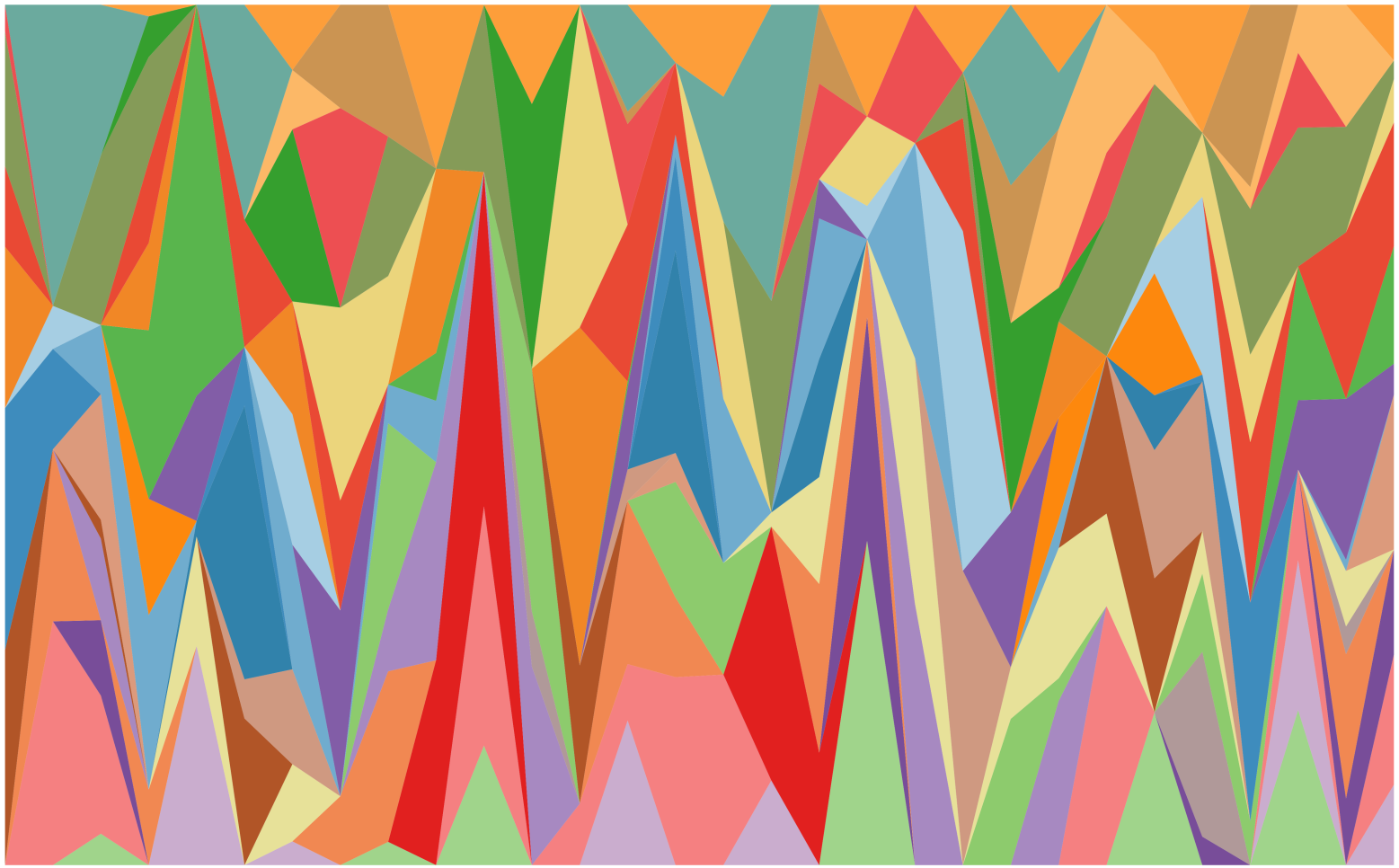
Shiny

- Shiny: Turn your R analyses into interactive web applications
- http://shiny.rstudio.com/
- Combine the functionality of shiny, the aesthetics of ggplot2 & the interactivity of plotly!

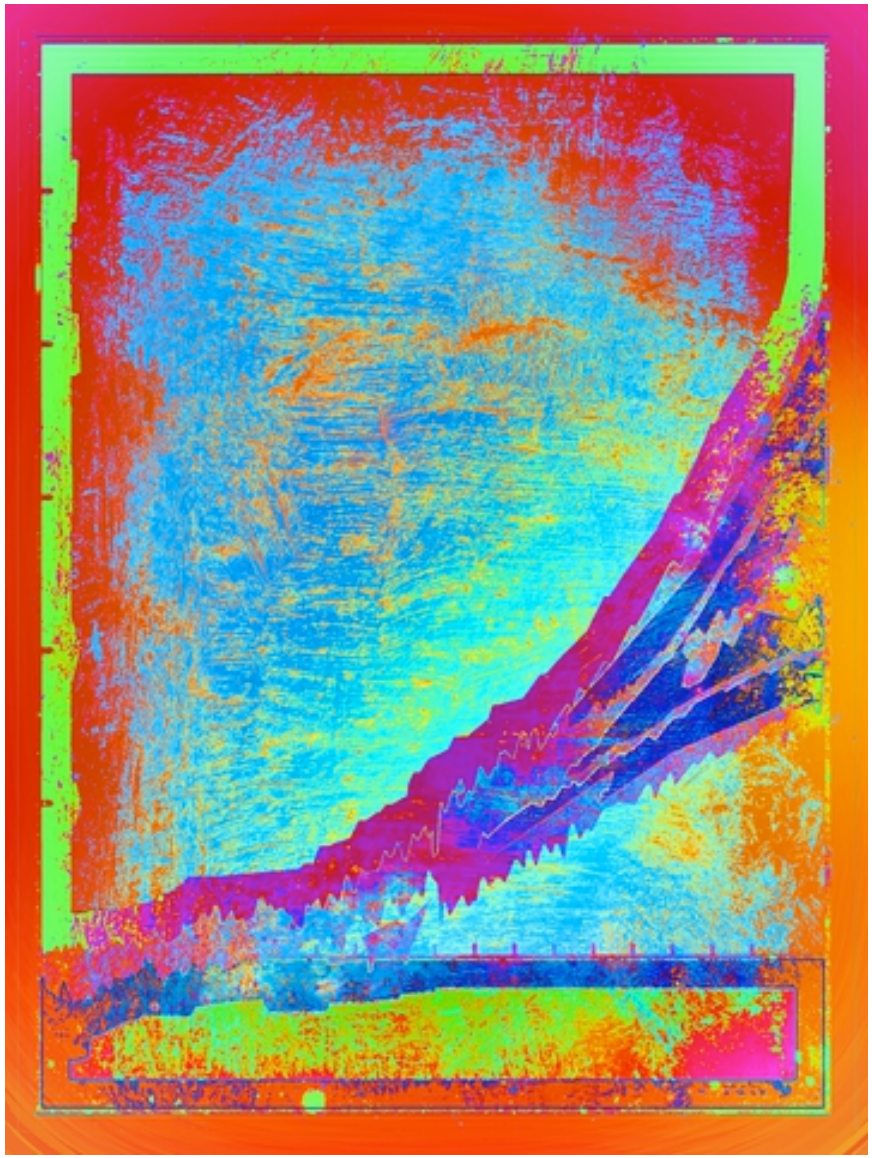


From Dataviz to DataArt

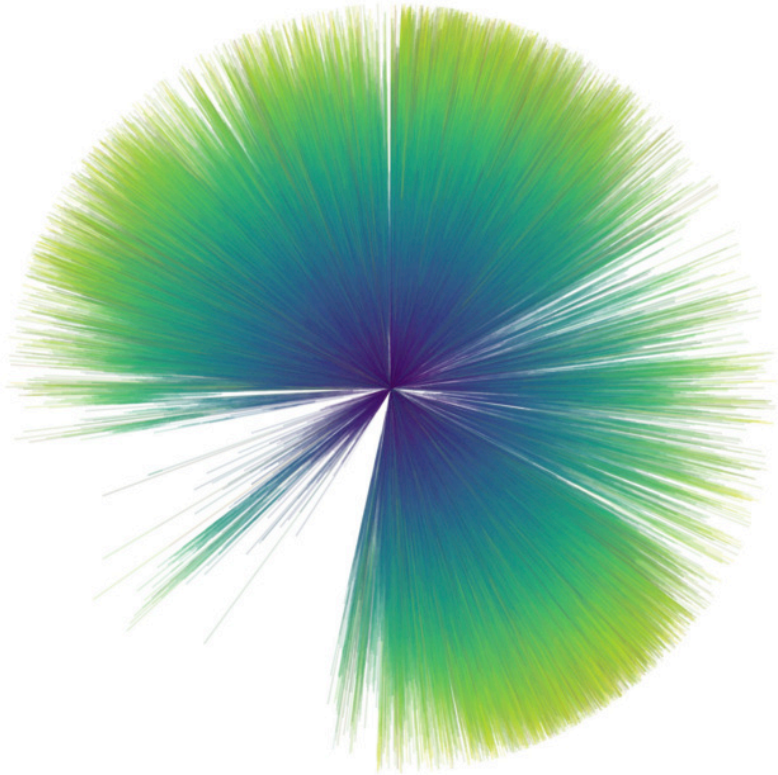
Science — Art

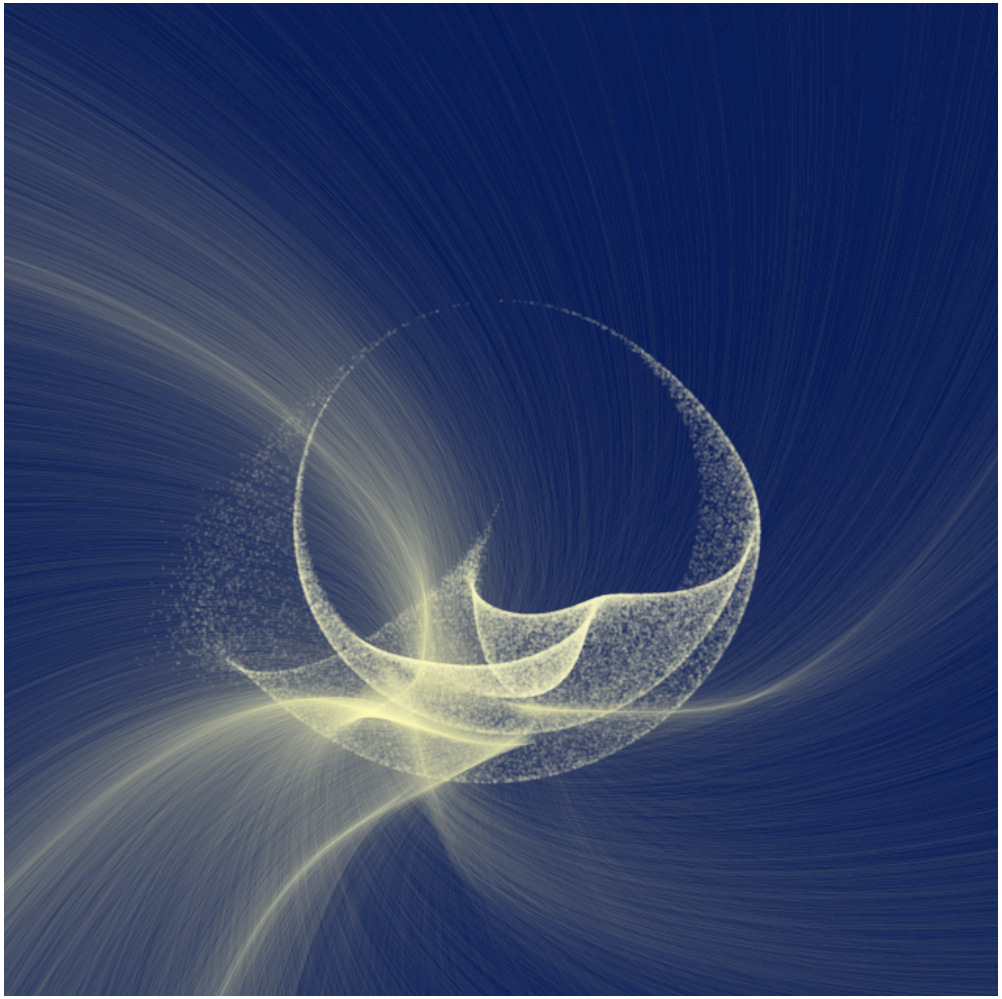


Holtz Yan - France

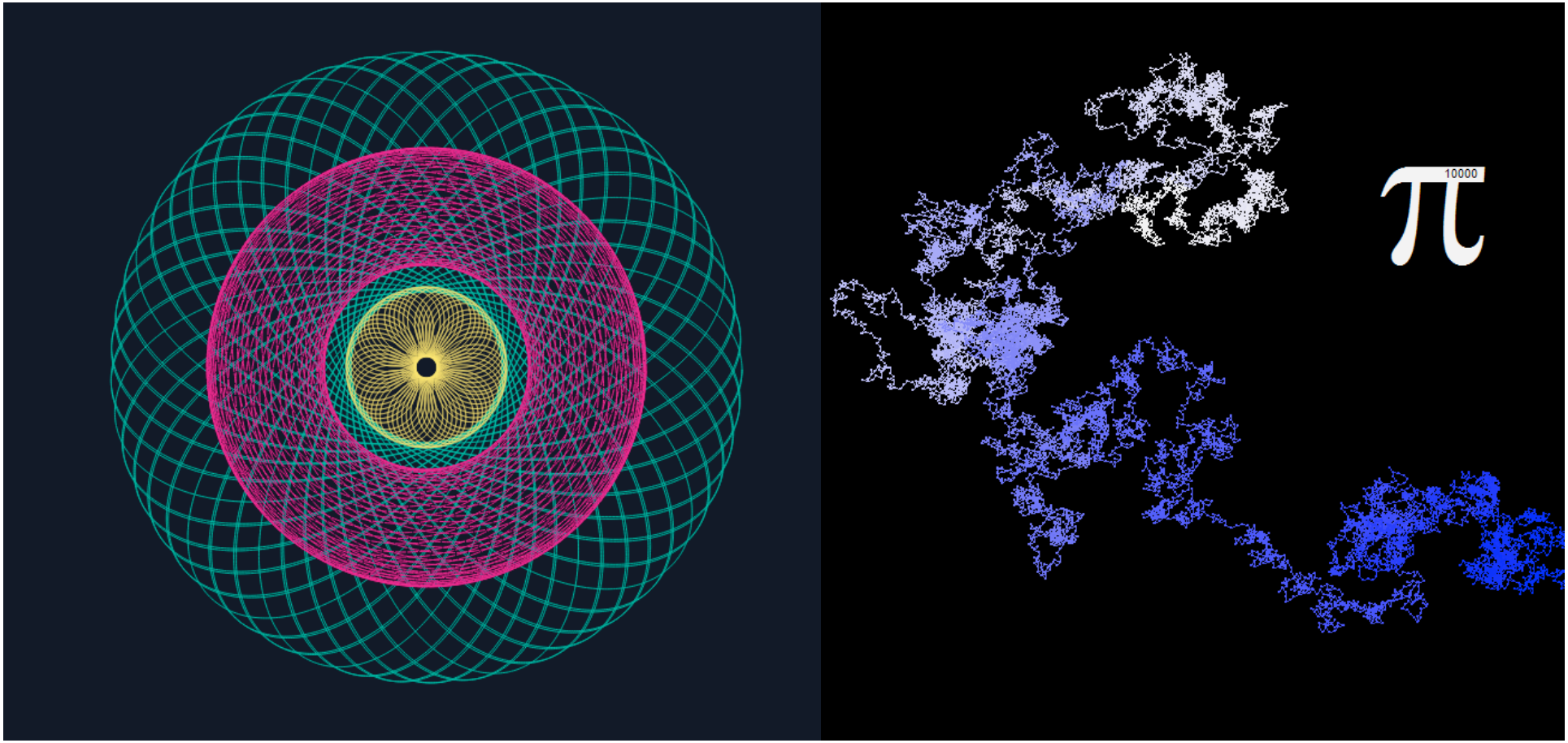


Alisa Singer- USA





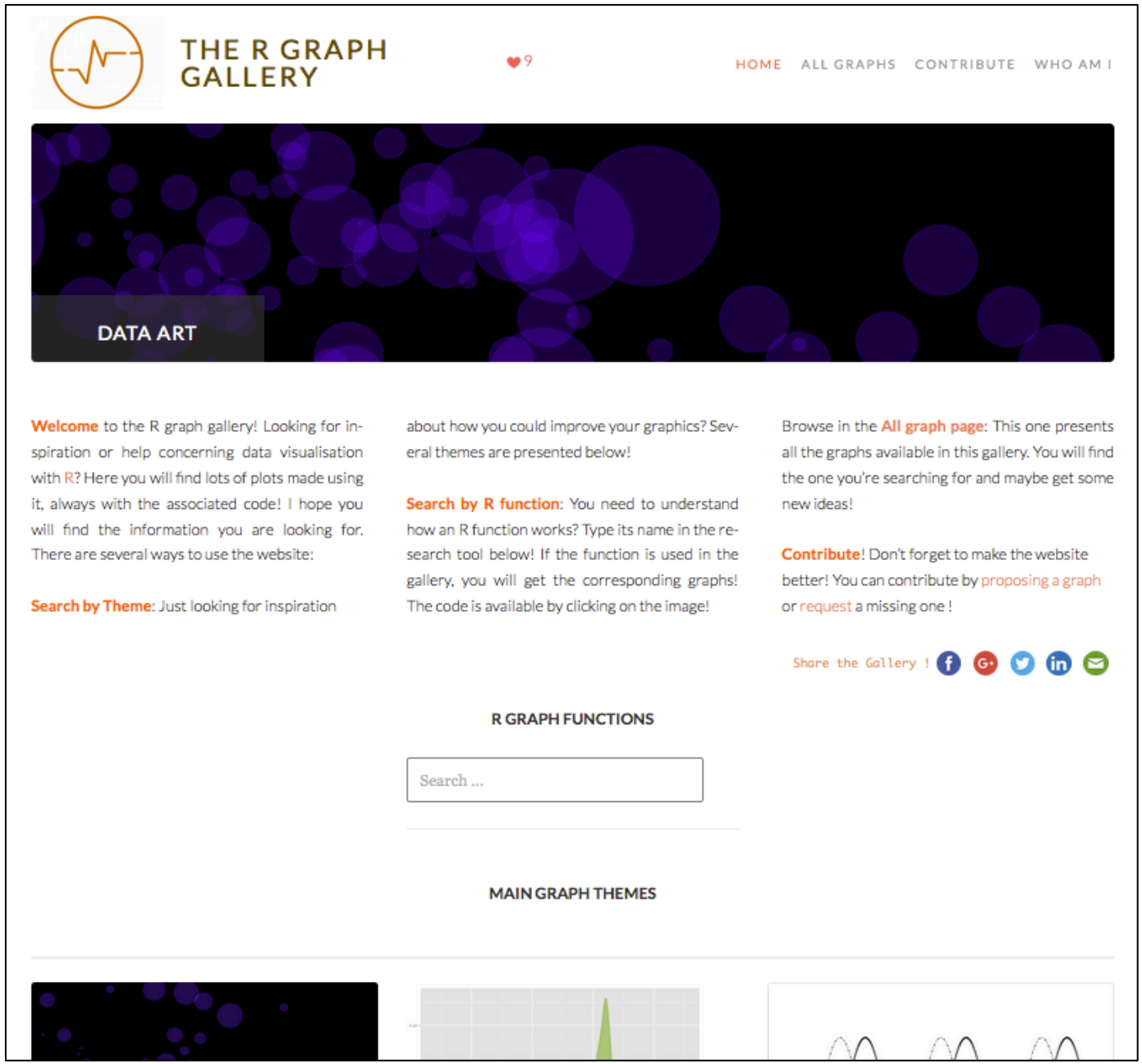
Marcus Volz - Australia



Nadieh Bremer - Netherland

Päivi Julin - Finland

Welcome page of the gallery

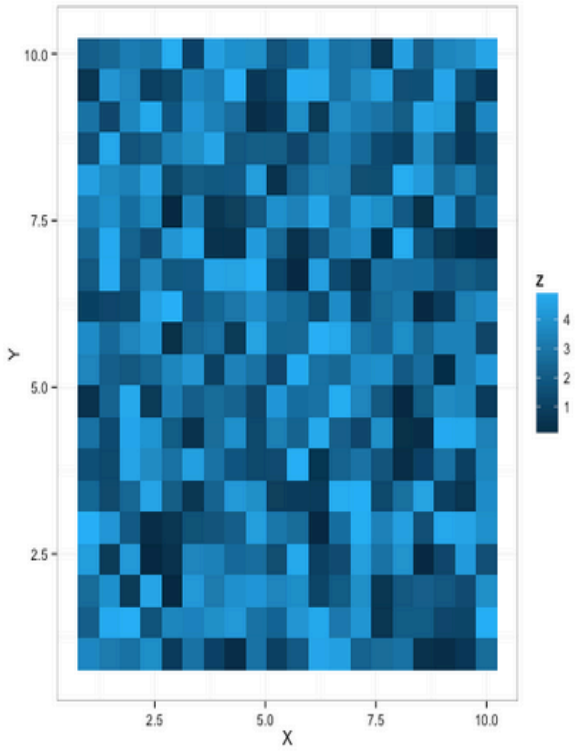


- >250 charts
- Organized by theme
- Search bar for function or graph type

www.r-graph-gallery.com

Example of a graphic page

- Reproducible code
- Link to relevant libraries, functions and related graphics
- Each graph targets a specific topic



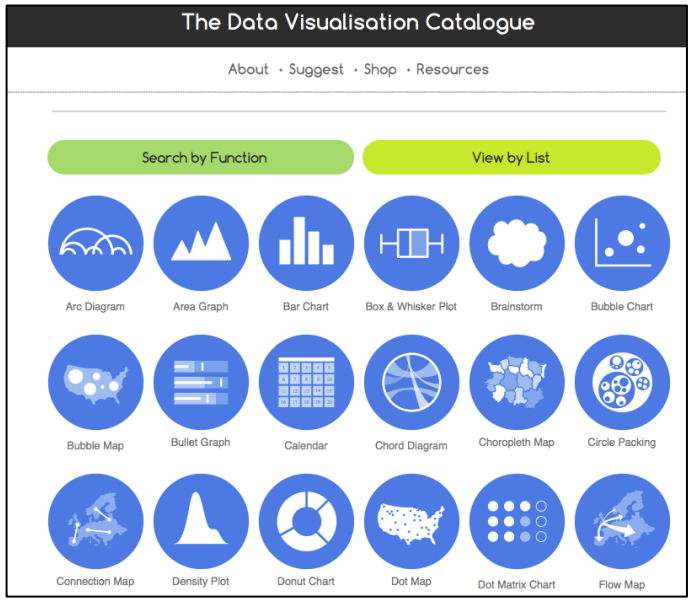
This is a levelplot made using the ggplot2 library. Each square represents a value of the input matrix.

You can also draw levelplot without ggplot2. Have a look to graph #78 if you have a square matrix, or to graph #27 if your data are organized in 3 columns !

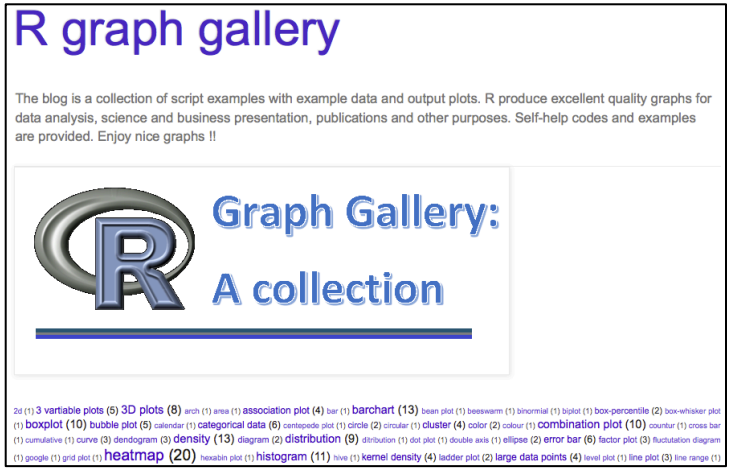
```
## Example data
x <- seq(1,10, length.out=20)
y <- seq(1,10, length.out=20)
data <- expand.grid(X=x, Y=y)
data$Z <- runif(400, 0, 5)

# Levelplot with ggplot2
library(ggplot2)
ggplot(data, aes(X, Y, z= Z)) + geom_tile(aes(fill = Z)) + theme_bw()

# To change the color of the gradation :
ggplot(data, aes(X, Y, z= Z)) + geom_tile(aes(fill = Z)) +
    theme_bw() +
    scale_fill_gradient(low="white", high="blue")
```

http://www.r-graph-gallery.com/79-levelplot-with-ggplot2/

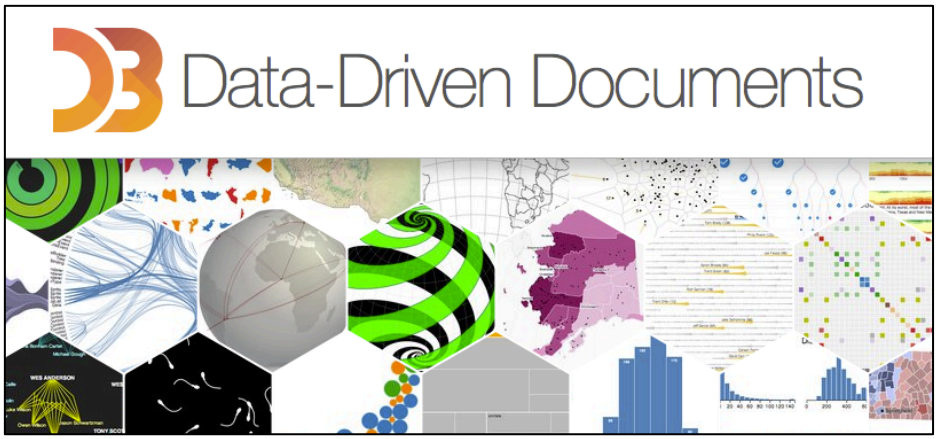
Other resources



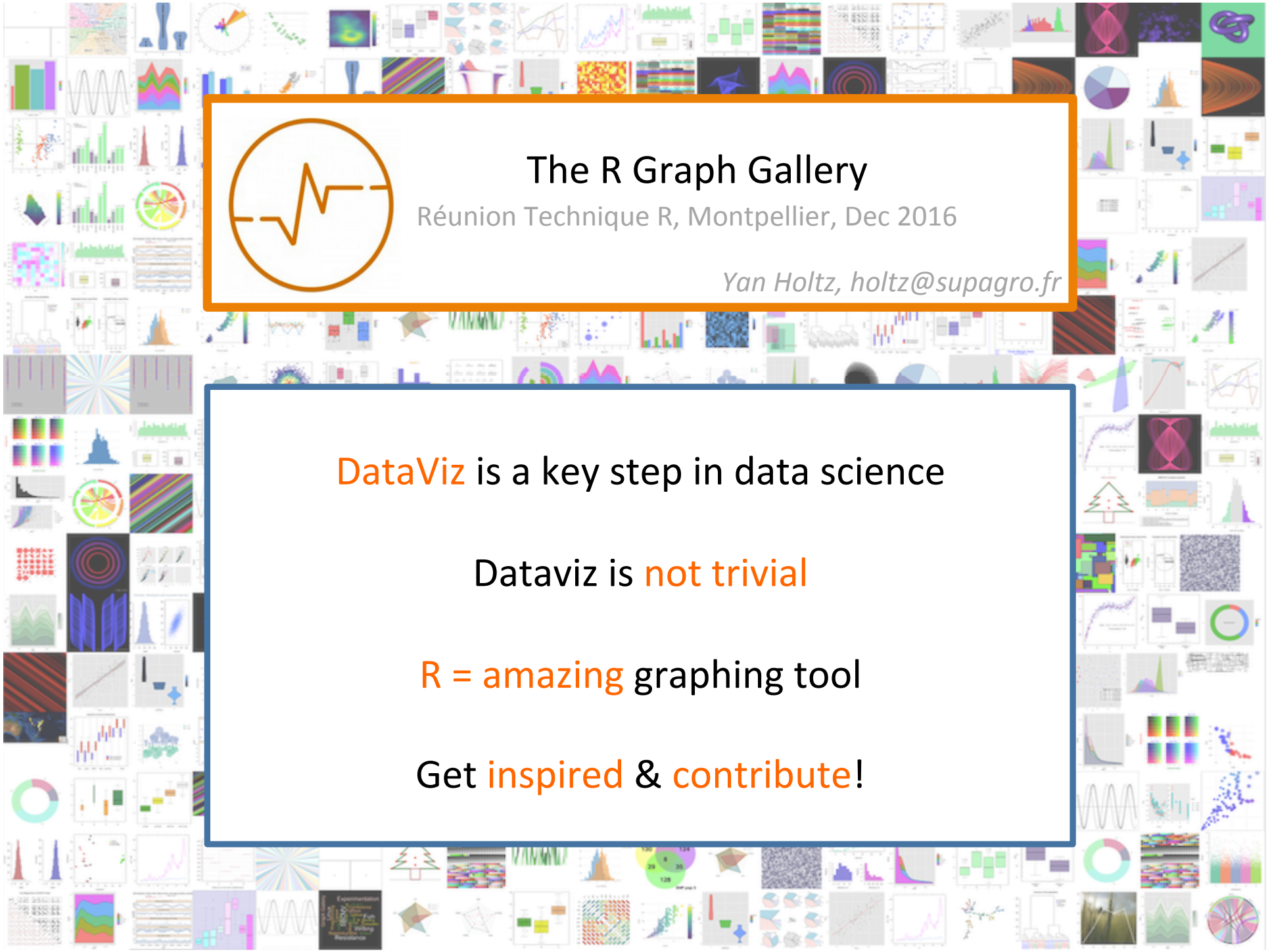
http://www.datavizcatalogue.com/



http://rgraphgallery.blogspot.fr/



https://d3js.org/



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DataViz is a key step in data science

Dataviz is not trivial

R = amazing graphing tool

Get inspired & contribute!