

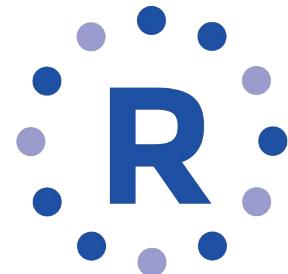
```
library(dplyr)  
  
rladies_global %>%  
  filter(city == 'Mendoza')
```



| R-Ladies

| Mendoza

Auspician



consortium





Hola

Soy Ana Laura Diedrichs

Ing. en Sistemas de Información.

Realizando el doctorado en la UTN.

Uso R hace 5 años.





¿Qué es R?



Lenguaje de **programación** de **código abierto** con énfasis en estadística y gráficos.

R compila y se ejecuta en una amplia variedad de plataformas UNIX, Linux, FreeBSD, Windows y MacOs.

<https://www.r-project.org/>



Código abierto (open source)

- Acceso al código fuente
- Modelo de desarrollo de software abierto
- R está disponible bajo los términos de la licencia GNU de la Free Software Foundation

```
> remove.packages("ggplot2")
> install.packages("ggplot2")
```



Funcionalidades de R

- Funcionalidades básicas orientadas a la estadística, operaciones aritméticas y matriciales, y soporte gráfico estático.
- El resto de las funcionalidades se instala en R mediante paquetes
- Cada paquete es un librería que añade nuevos comandos, más funcionalidades a R.
- Se accede a R mediante comandos de consola, pero hoy en día existen varias GUI o IDEs:

Acceso a R desde consola

```
ana@ana-Inspiron-N5110: ~
ana@ana-Inspiron-N5110:~$ R
R version 3.3.2 (2016-10-31) -- "Sincere Pumpkin Patch"
Copyright (C) 2016 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

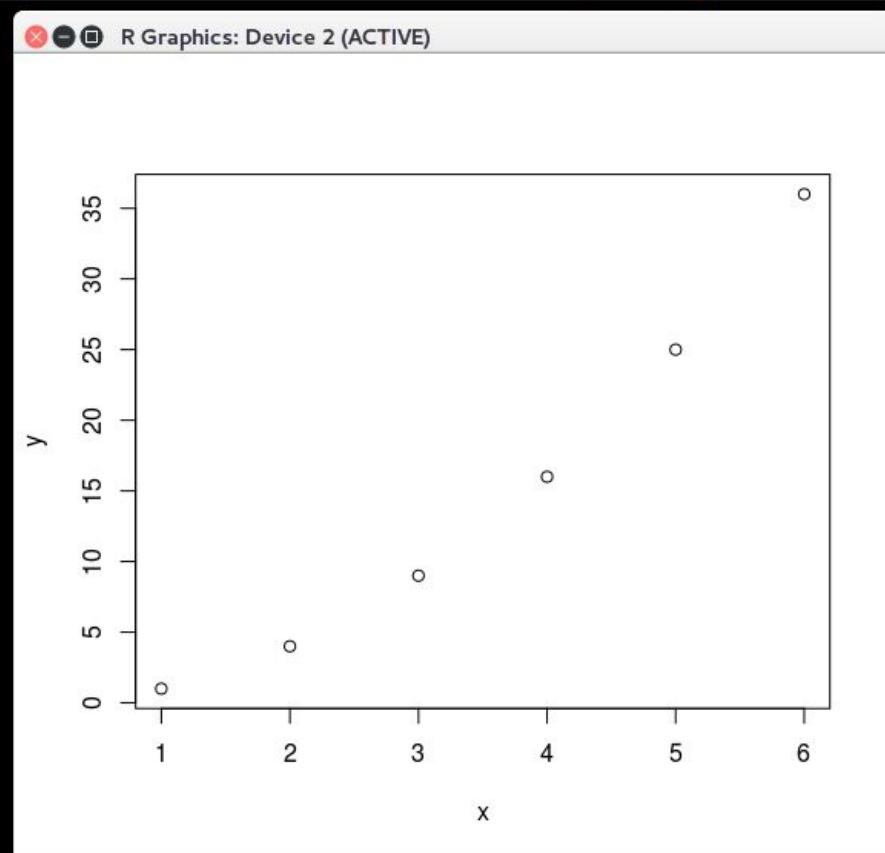
Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[Previously saved workspace restored]

> x <- c(1,2,3,4,5,6)
> y <- x^2
> print(y)
[1] 1 4 9 16 25 36
> y
[1] 1 4 9 16 25 36
> sd(y)
[1] 13.37784
> plot(x,y)
>
```



Estadística

File Edit View Plots Session Build Debug Profile Tools Help

Project: (None)

script-download.R dt.R experiment.bn.R ejemplo1.R

Source on Save Run Source

```
1 x <- c(1,2,3,4,5,6)
2 y <- x^2
3 print(y)      # mostrar valores de y
4 mean(y)       # media
5 var(y)        #varianza
6 lm_1 <- lm(y ~ x) # linear regression model: y = B0 + (B1 * x)
7 print(lm_1)    # print model
8 summary(lm_1)  # Compute and print statistics for the fit
9 par(mfrow = c(2, 2))  # Request 2x2 plot layout
10 plot(lm_1)     # Diagnostic plot of regression model|
```

10:03 (Top Level) R Script

Console Terminal

```
~/
> source('~/Dropbox/r ladies/primer-meetup/ejemplo1.R')
[1] 1 4 9 16 25 36

Call:
lm(formula = y ~ x)

Coefficients:
(Intercept)      x
-9.333         7.000

> mean(y)
[1] 15.16667
> summary(lm_1)

Call:
lm(formula = y ~ x)

Residuals:
 1   2   3   4   5   6 
 3.3333 -0.6667 -2.6667 -2.6667 -0.6667  3.3333 

Coefficients:
```

Environment History Connections

Files Plots Packages Help Viewer

Zoom Export Publish

Residuals vs Fitted

Standardized residuals

Normal Q-Q

Theoretical Quantiles

Scale-Location

Standardized residuals

Residuals vs Leverage

Cook's distance

Leverage

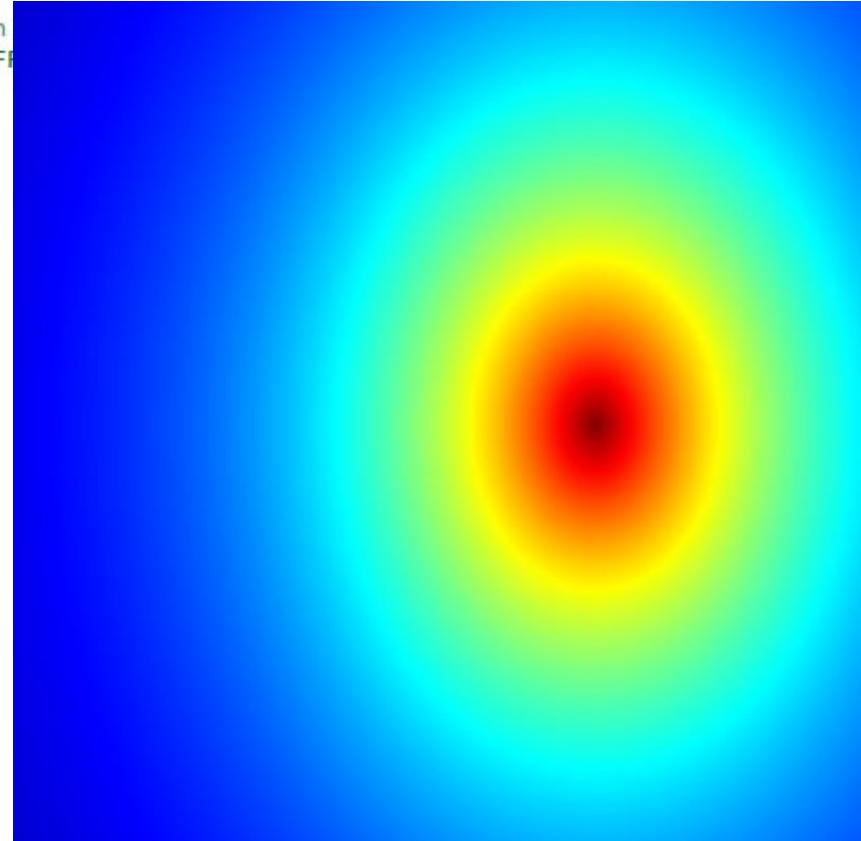


Animaciones

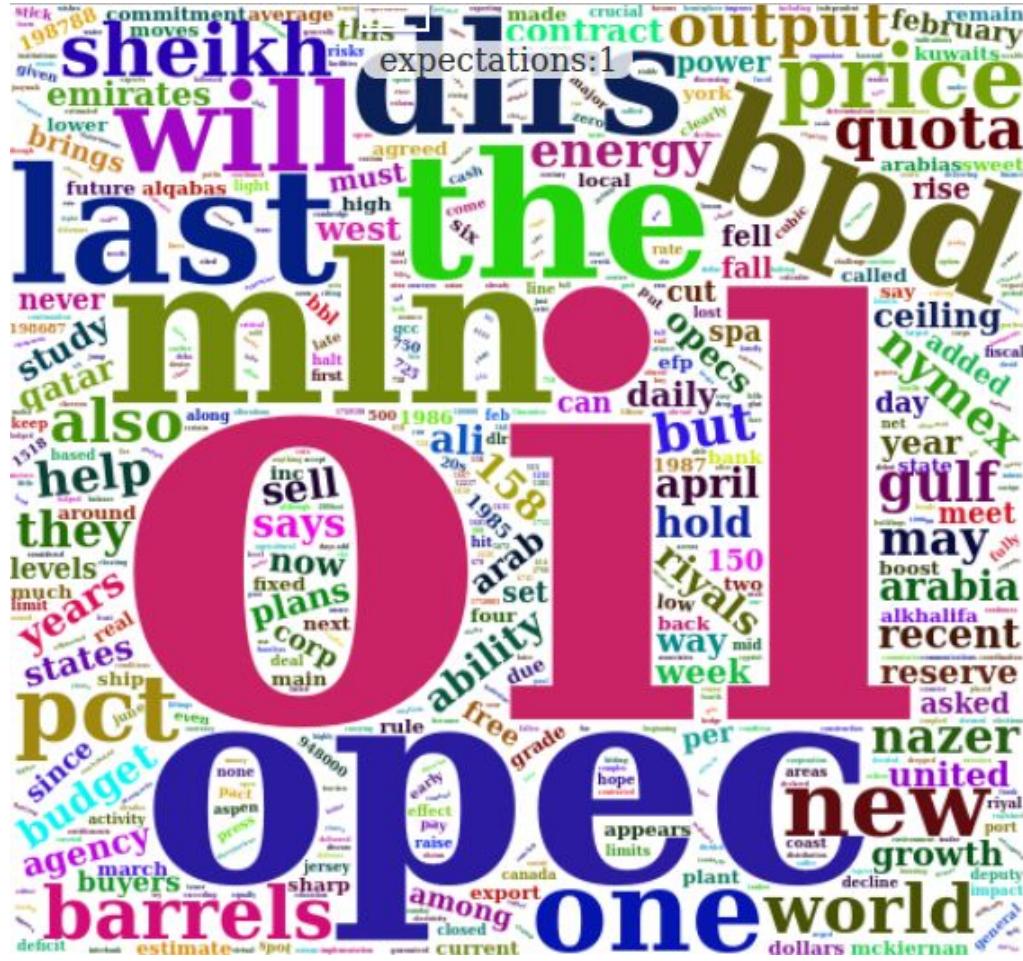
```
##  
install.packages("caTools") # install external package  
library(caTools) # external package providing write.gif function  
jet.colors <- colorRampPalette(c("#00007F", "blue", "#007FFF", "cyan", "#7FFF  
    "yellow", "#FF7F00", "red", "#7F0000"))  
dx <- 400 # define width  
dy <- 400 # define height  
C <- complex(real = rep(seq(-2.2, 1.0, length.out = dx), each = dy),  
             imag = rep(seq(-1.2, 1.2, length.out = dy), dx))  
C <- matrix(C, dy, dx) # reshape as square matrix of complex numbers  
Z <- 0 # initialize Z to zero  
X <- array(0, c(dy, dx, 20)) # initialize output 3D array  
for (k in 1:20) { # loop with 20 iterations  
  Z <- Z^2 + C # the central difference equation  
  X[, , k] <- exp(-abs(Z)) # capture results  
}  
write.gif(X, "Mandelbrot.gif", col = jet.colors, delay = 100)
```

https://en.wikipedia.org/wiki/Mandelbrot_set

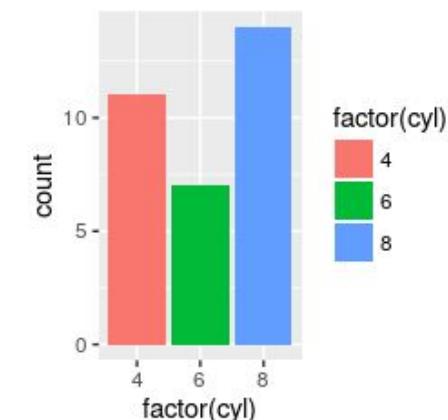
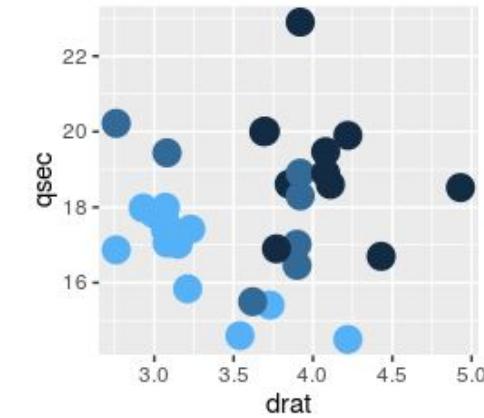
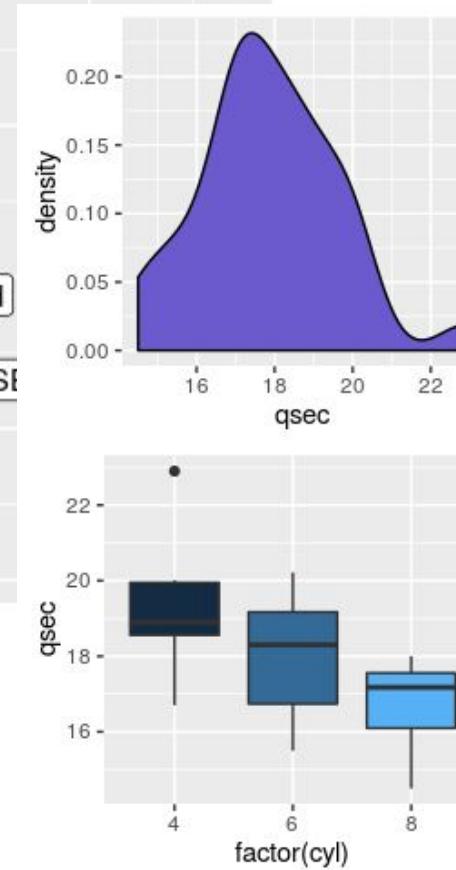
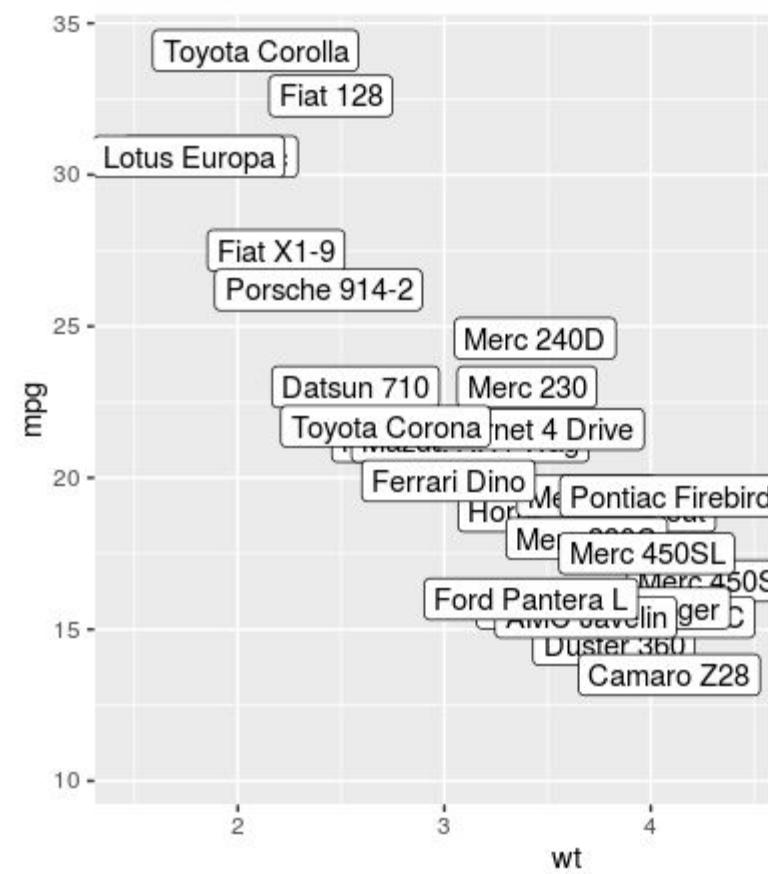
[https://en.wikipedia.org/wiki/R_\(programming_language\)](https://en.wikipedia.org/wiki/R_(programming_language))



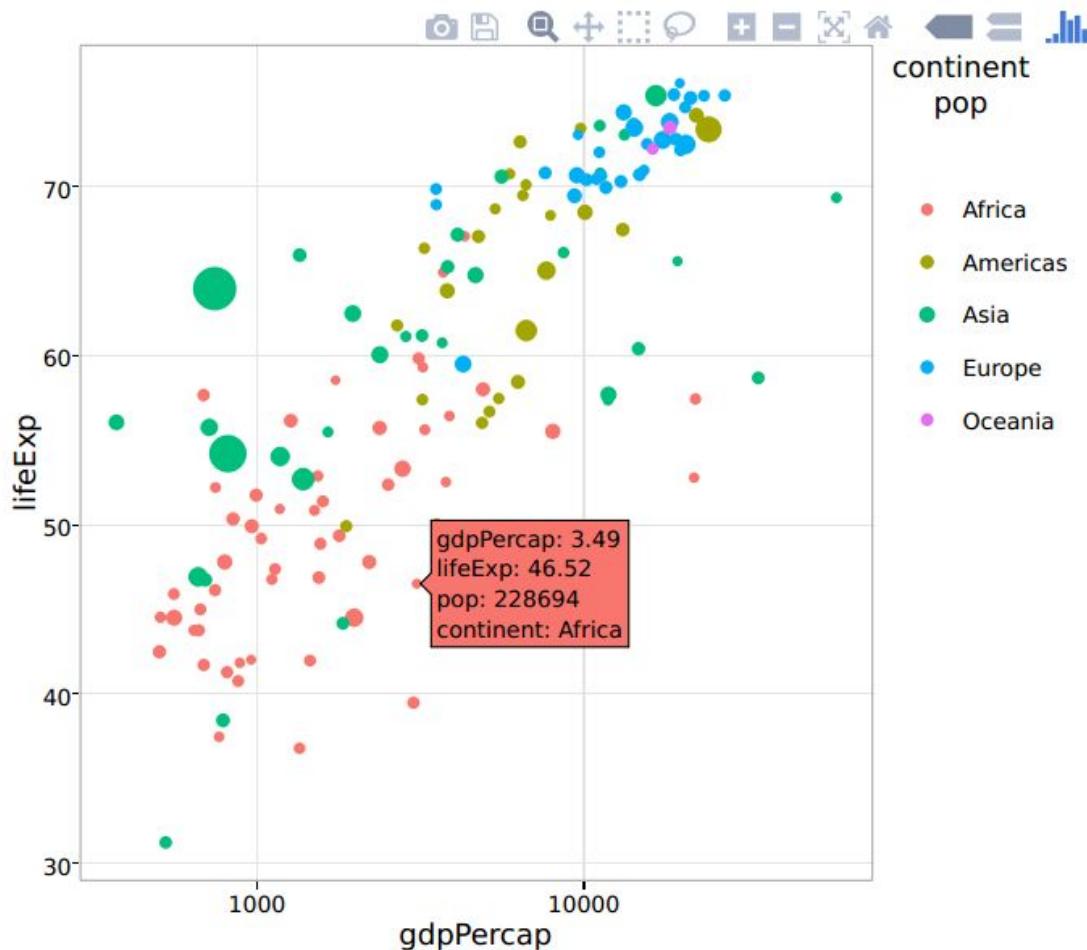
word2cloud



ggplot2

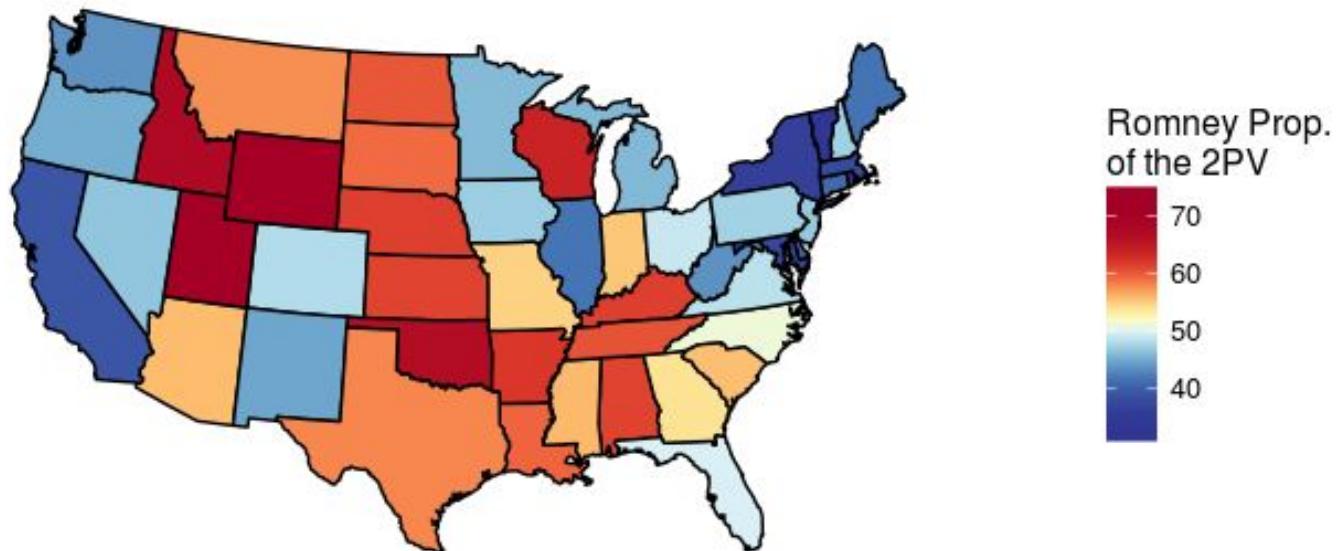


Ggplot + plotly



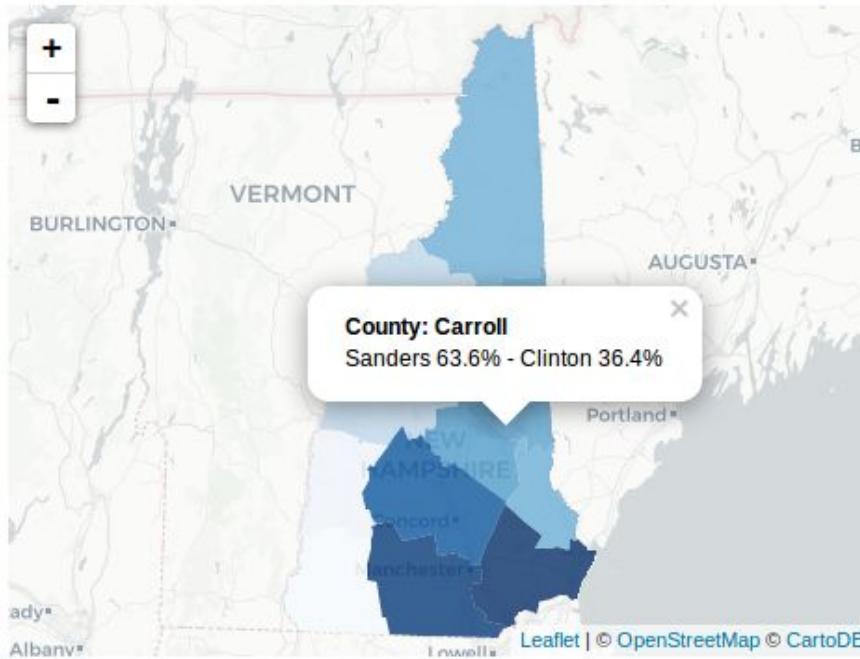
Mapas

2012 Election Returns by State



<https://gist.github.com/dsparks/4031654>

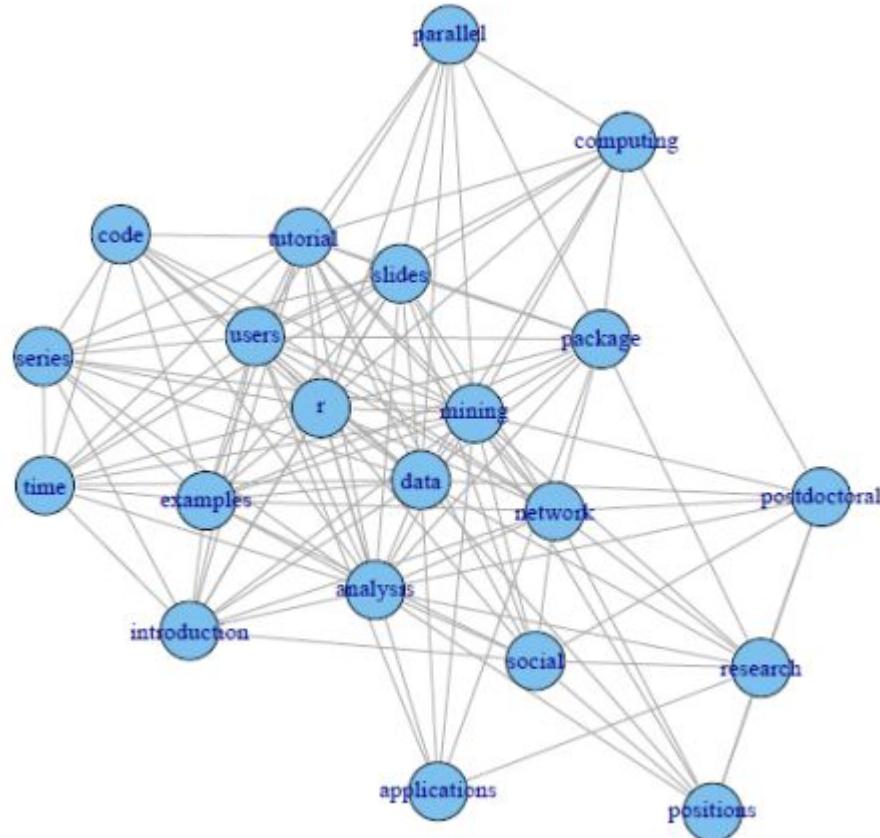
Mapa interactivo



Basic interactive map created in R and RStudio's Leaflet package. Click on an area to see the underlying data.

<https://www.computerworld.com/article/3038270/data-analytics/create-maps-in-r-in-10-fairly-easy-steps.html?page=2>

Análisis de redes sociales



Análisis de resultados

dataset
dacc-temp

T value
1

Training Config
smote

Algoritmo
hc

Score
bic-g

Variable a Predecir
las_paredes.te

ConfusionMatrixHelada

Error distribution

ConfusionMatrixTemps

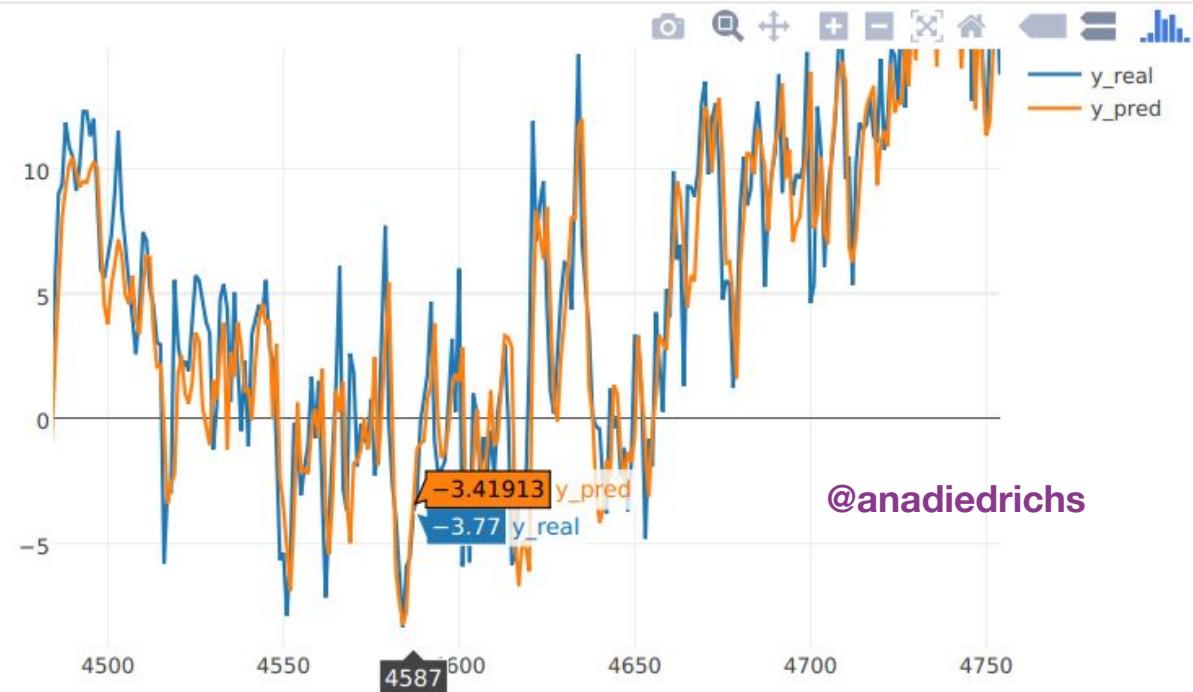
Cummulative differences

Errors regression

BN description

Plot

Table



@anadiedrichs

Y muchas aplicaciones más



- Bioinformática: biología molecular, secuenciamiento ADN (Bioconductor)
- Machine learning (redes neuronales, árboles decisión, etc), deep learning (kerasR)
- Integración con diversas fuentes de datos:
 - Archivos excel, bases de datos, texto plano (.csv,.txt)
 - Descarga de datos alojados en internet via REST o “web scraping”
- <https://github.com/rstudio/RStartHere>
- Shiny gallery: <https://shiny.rstudio.com/gallery/>
- Mucho más!



The R Series

blogdown

Creating Websites
with R Markdown



Yihui Xie
Amber Thomas
Alison Presmanes Hill

CRC Press
Taylor & Francis Group

A CHAPMAN & HALL BOOK

The R Series

bookdown

Authoring Books and Technical
Documents with R Markdown



Yihui Xie

CRC Press
Taylor & Francis Group

A CHAPMAN & HALL BOOK



Conferencias y publicaciones



The R Journal

The R Journal is the open access, refereed journal of the [R project](#) for statistical computing. It features short to medium length articles covering topics that should be of interest to users or developers of R.

The R Journal intends to reach a wide audience and have a thorough review process. Papers are expected to be reasonably short, clearly written, not too technical, and of course focused on R. Authors of refereed articles should take care to:

- put their contribution in context, in particular discuss related R functions or packages;
- explain the motivation for their contribution;
- provide code examples that are reproducible.

Following revision of the content description of *The R Journal*, from January 2017 submitted articles may include:

Reviews and proposals:

surveying and discussing challenges and opportunities of potential importance for the broader R community, including proposals and proof-of-concept implementations.

Comparisons and benchmarking:

of implementations in base-R and contributed packages with each other, and where relevant with

Navigation

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ISSN: 2073-4859



LATINR Conferencia Latinoamericana sobre Uso de R en Investigación + Desarrollo

- LLAMADO A PRESENTACION DE TRABAJOS 47 JAIIO
<http://47jaiio.sadio.org.ar>
- En Buenos Aires.
- DEADLINE 30 DE ABRIL !!
- SITIO <http://latin-r.com>
- Un mes gratis de data-camp a los primeros envíos.



R-Ladies



Organización mundial que
promueve la diversidad de
género en la comunidad **R**
mediante **encuentros** y
mentoreo en un **amigable** y
seguro



La comunidad R sufre de una subrepresentación de las minorías de género (incluyendo pero no limitado a mujeres cis, mujeres trans, personas no binarias y agéneros) en cada uno de los roles y áreas de participación, como líderes, desarrolladores de paquetes, disertantes y participantes de conferencias, educadores y usuarios ([see recent stats](#)).



En 2010, un 9 % de los autores eran mujeres

Mair, P., Hofmann, E., Gruber, K., Hatzinger, R., Zeleis, A. and Hornik, K. (2015) Motivation, values, and work design as drivers of participation in the R open source project for statistical computing, *PNAS*
<https://doi.org/10.1073/pnas.1506047112>



En 2016, un 11,4 % de quienes mantienen paquetes R eran mujeres

- <http://forwards.github.io/data/>
-



useR conference

- En 2016 se vio un alza del 19 % al 28 % de asistencia femenina



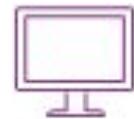
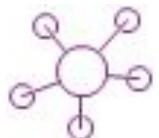
Nuestra misión



Más mujeres y personas no-binarias

- programadores
- desarrolladores
- disertantes
- líderes

Más personas increíbles que integren la comunidad R y contribuyan desarrollando paquetes.





San Francisco, CA

Octubre 2012





2012

**San
Francisco**
(USA)

R-Ladies was born

October 2012

2013

2014

2015

2016

Taipei
(Taiwan)

London
(UK)

**Twin
Cities**
(USA)

August 2014

April 2015

March 2016



June 2016



San Francisco

What is R-ladies?

For girls interested in learning R and R statistical modeling. It's a place to learn, have fun, and meet other people who share your interest in R. We're an international group of women who are here to support each other.

This year we're:

- Promoting R
- Promoting R statistical modeling
- Supporting R beginners
- Supporting R users
- Supporting R in business
- Supporting R in government
- Supporting R in science
- Supporting R in education
- Supporting R in technology
- Supporting R in art
- Supporting R in activism
- Supporting R in activism

R-ladies

Come and join us!

www.meetup.com/R-ladies/

Gabriela de Queiroz

gabidequeiroz@gmail.com
[@gdequeiroz](https://twitter.com/gdequeiroz)

The newest participant of the group

London

R-Ladies London

Presentation of the Women in R Taskforce

Alice Dahl & Hannah Frick
[@alice_dahl & @hfrick](mailto:@alice_dahl)
meetup.com/R-Ladies-Coding-Club-London
github.com/R-Ladies-Coding-Club-London
[@RLadiesLONDON](http://RLadiesLondon.org)

What's Next?

- Scoping Our Initiative:
 - Support R Beginners
 - Support R Users
 - Support Girls in STEM careers
 - Support Girls Mentoring
 - Develop Women's Leadership

¿Quiénes son?



Las cabezas organizadoras de R-Ladies



ALICE DAISH



CLAUDIA VITOLO



ERIN LEDELL



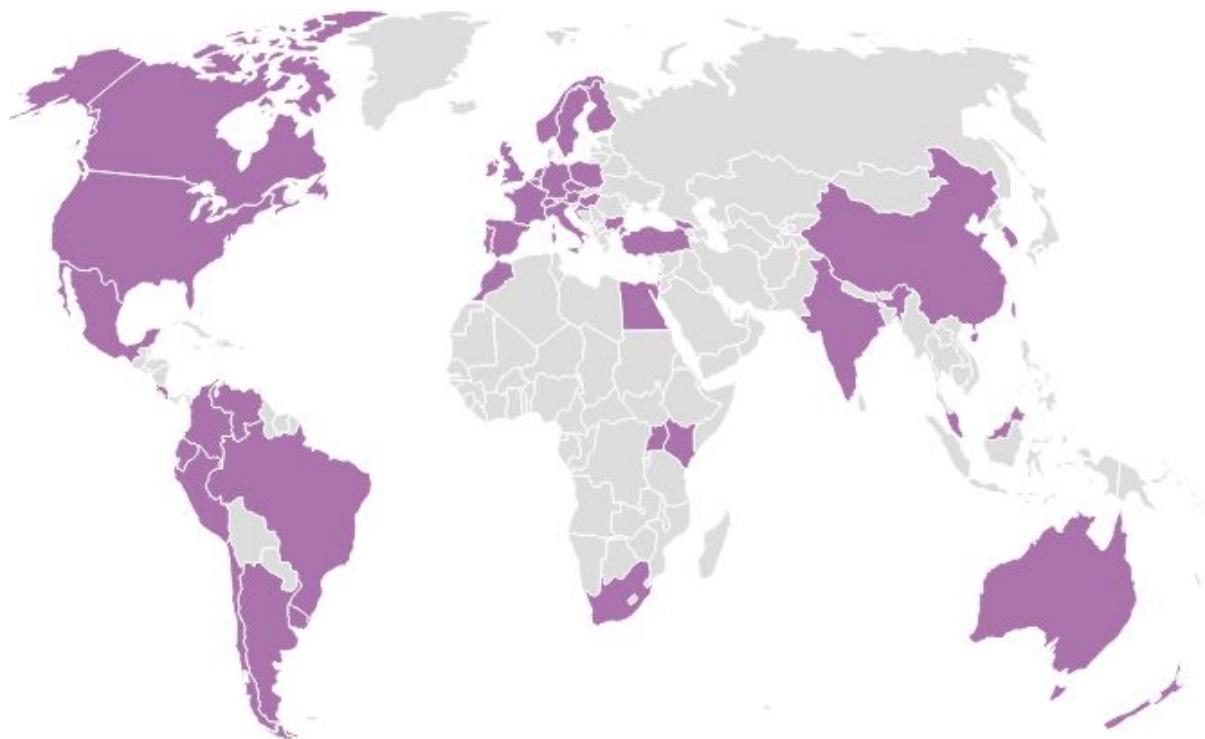
GABRIELA DE QUEIROZ



HANNAH FRICK

R-Ladies Global! (Agosto 2016)

R-ladies en el mundo





R-Ladies Argentina



R-Ladies Bariloche

R-Ladies Buenos Aires

R-Ladies Córdoba

R-Ladies La Plata

R-Ladies Mendoza

R-Ladies Santa Rosa

R-Ladies Resistencia

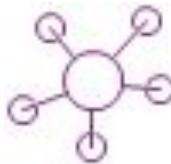
R-Ladies Ushuaia



¿Cómo ayudarnos?



¿Cómo nos puedes ayudar?



Apoya

A capítulos locales

- Lugar para evento
- Comida, bebida, sponsor

Recomienda

- R-Ladies directorio
- Oportunidades, por ejemplo, becas, conferencias

Inspira

Alza tu voz

- Unite R-Ladies
- Comparte código
- Inspira y apoya
- Enseña
- Tweet
- Blog

Festival Latinoamericano de Software Libre



SÁBADO 28 DE ABRIL 2018, 9 - 18 HS

MAÑANA CHARLAS

TARDE ¡Taller introductorio a R!

Inscribite

<http://meetu.ps/e/F2mRK/F3yXb/f>



¡Gracias!



mendoza@rladies.org



<https://www.meetup.com/es/rladies-mendoza>



<https://twitter.com/RLadiesMza>



<https://www.facebook.com/RLadiesMendoza>

NO OLVIDAR -
R- ladies workshop
<http://meetu.ps/e/F2mRK/F3yXb/f>

