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Análisis de Sentimientos en Twitter (actualización 2022)

Presentation · April 2021

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Robert Hernández Martínez

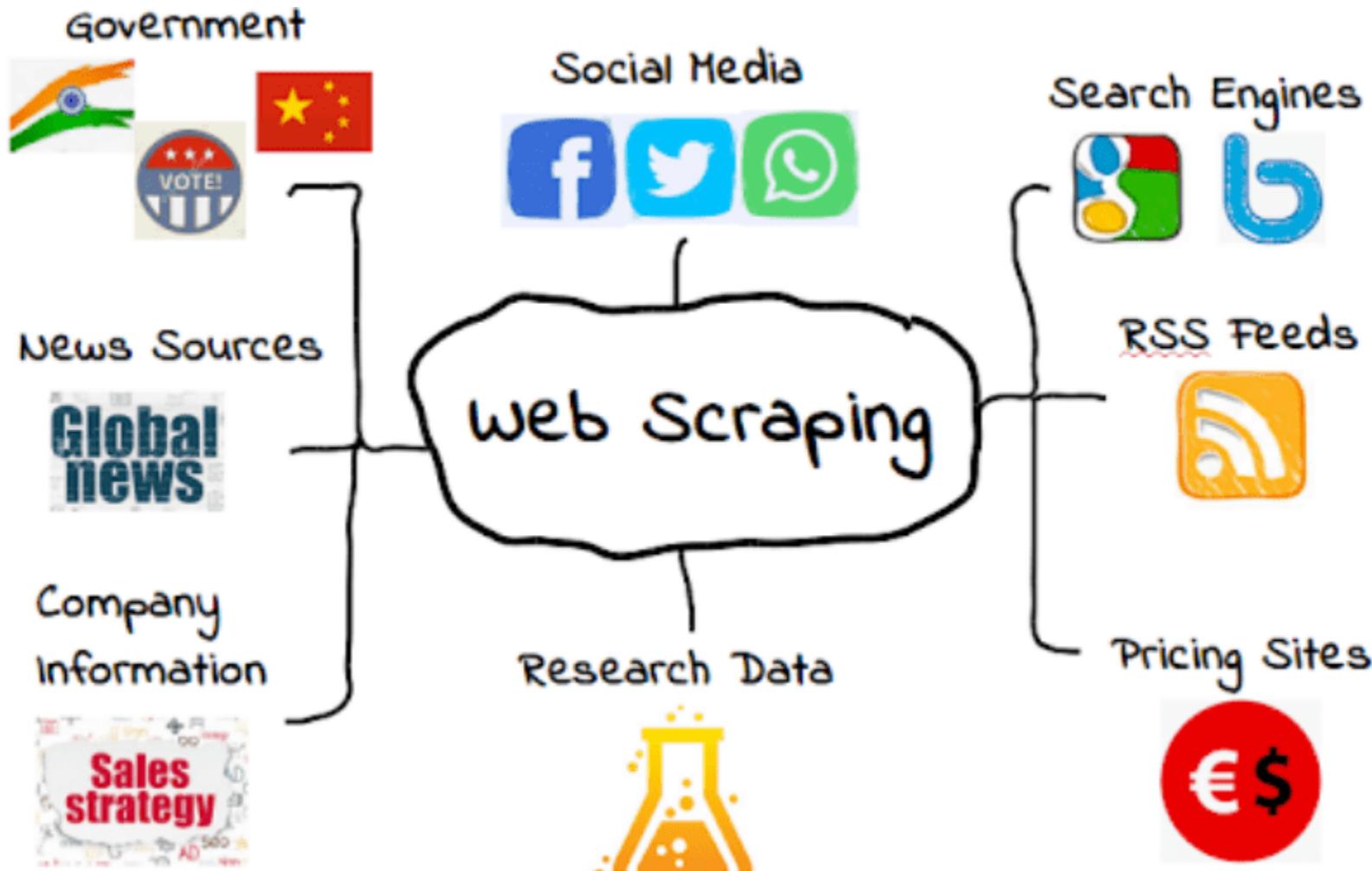
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SEE PROFILE

¿Qué es web scraping?

- Es un método automatizado para extraer grandes volúmenes de datos de websites.



¿Qué es web scraping?

- Uno de los principales requerimientos de investigadores y *social listeners* es el *web scraping* en periódicos relevantes para realizar hallazgos sobre noticias de interés público.



¿Qué es Social Network Analysis (SNA)?

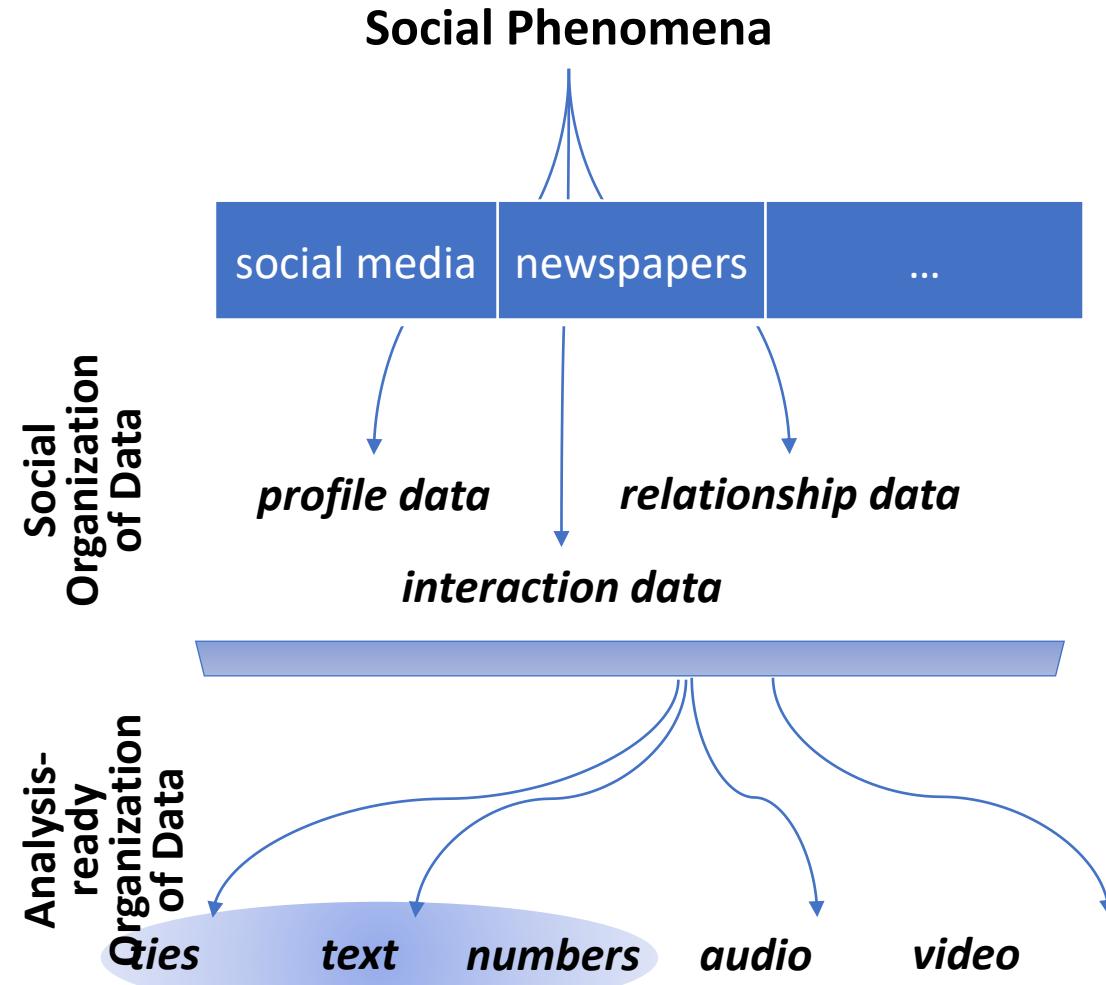
- **Es descubrir, analizar y visualizar datos a través del tráfico en redes sociales con el propósito de tomar decisiones tácticas y estratégicas.**



Social Data

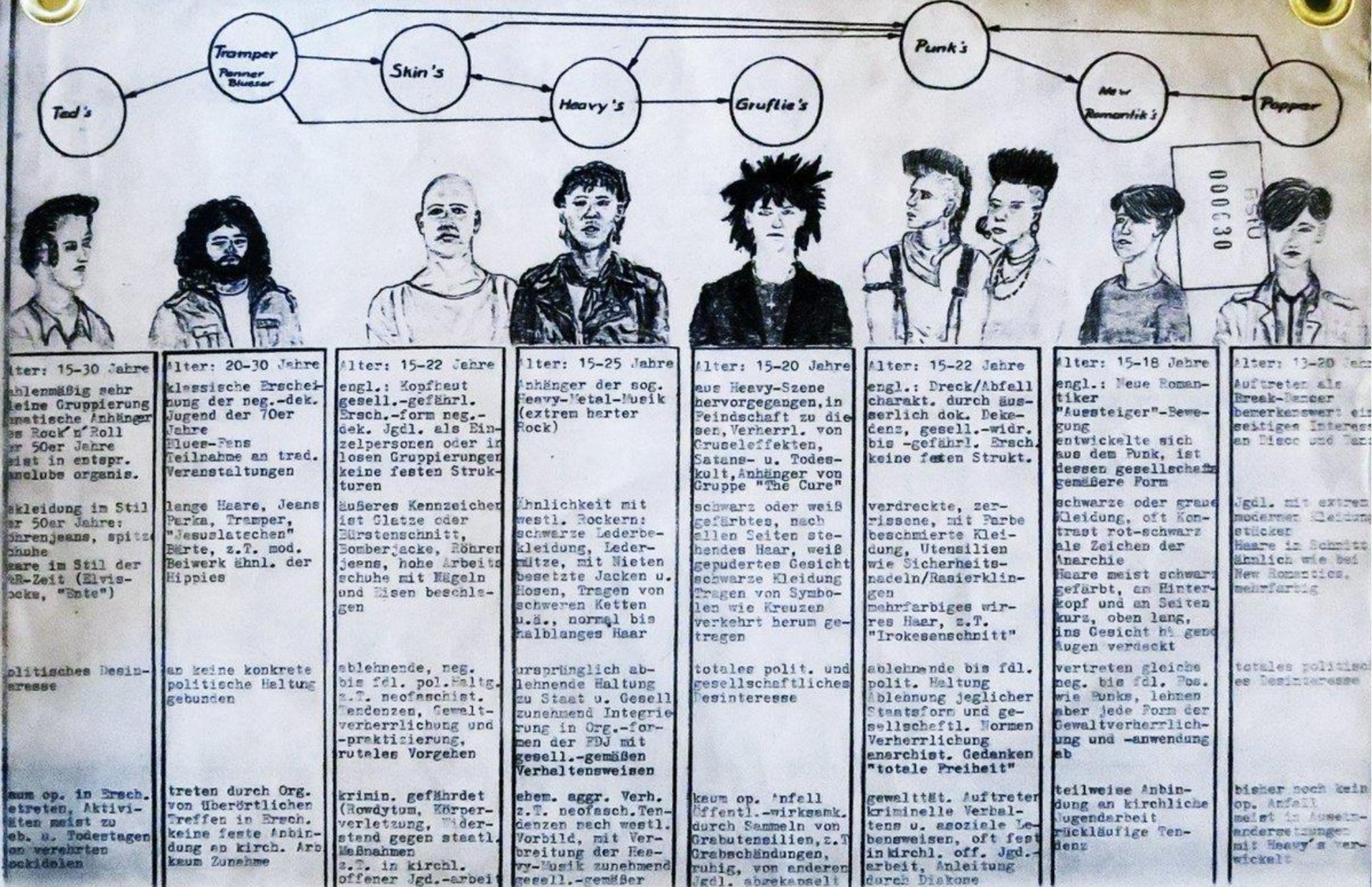
- **Perfiles, interacciones y vínculos**

Miranda Shaila (2019) Social Network Analytics. Network and Text Methods with NodeXL and R. Prospect Press. USA.

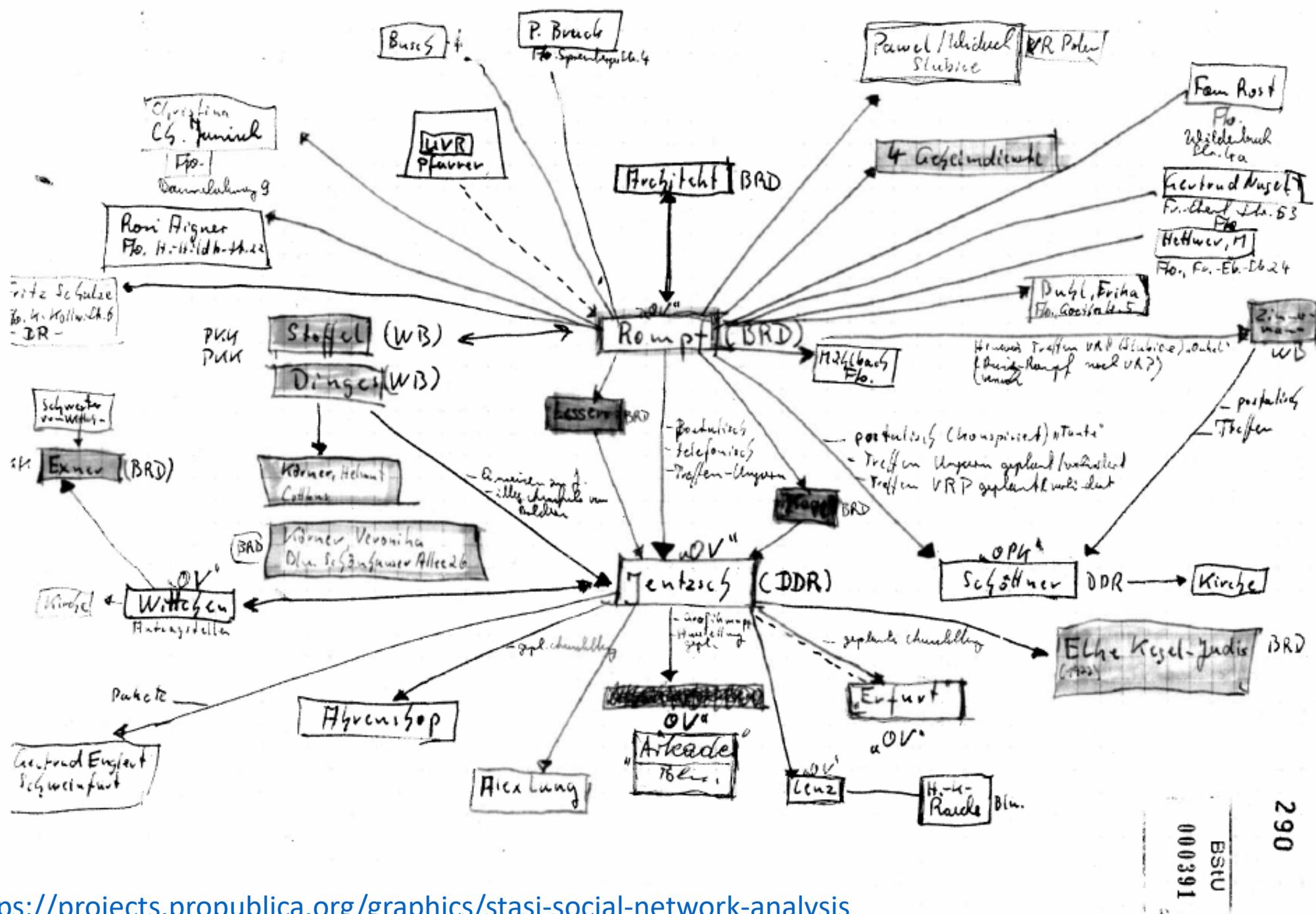


East
German
secret
police
guide for
identifying
youth
subcultures. Circa
1985

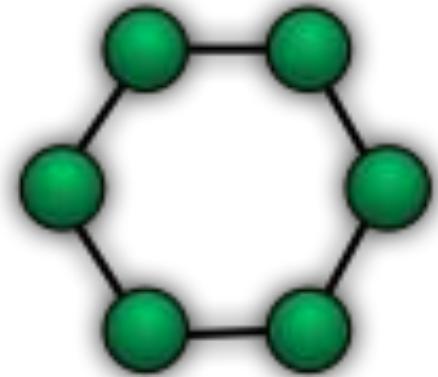
Übersicht über Erscheinungsformen negativ-dekadenter Jugendlicher in der DDR



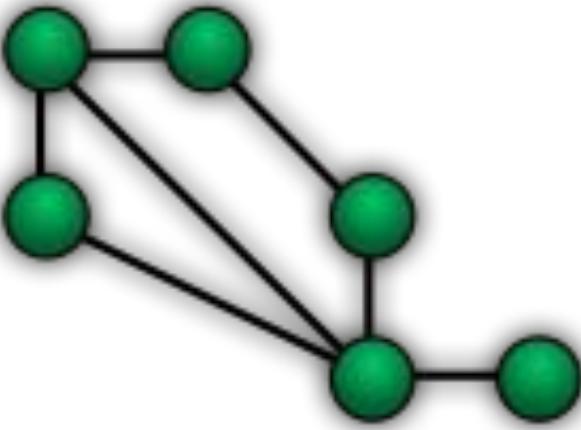
Stasi's Graph of an East Germany Poet's Network



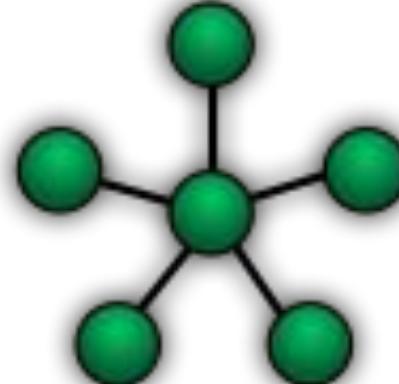
Topología de Redes



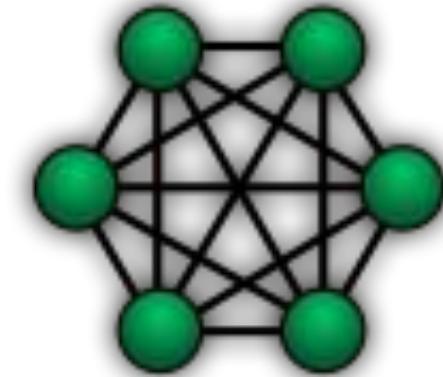
Ring



Mesh



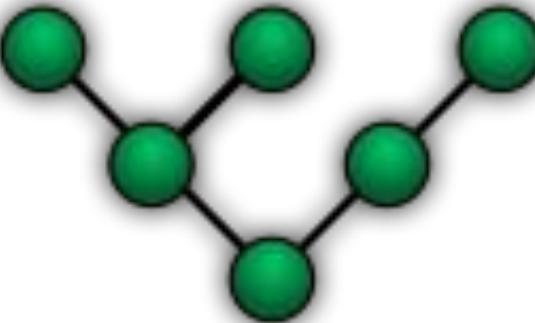
Star



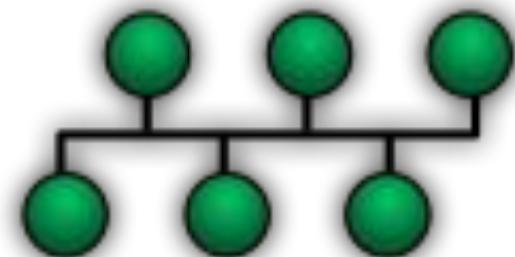
Fully Connected



Line



Tree



Bus

Agenda

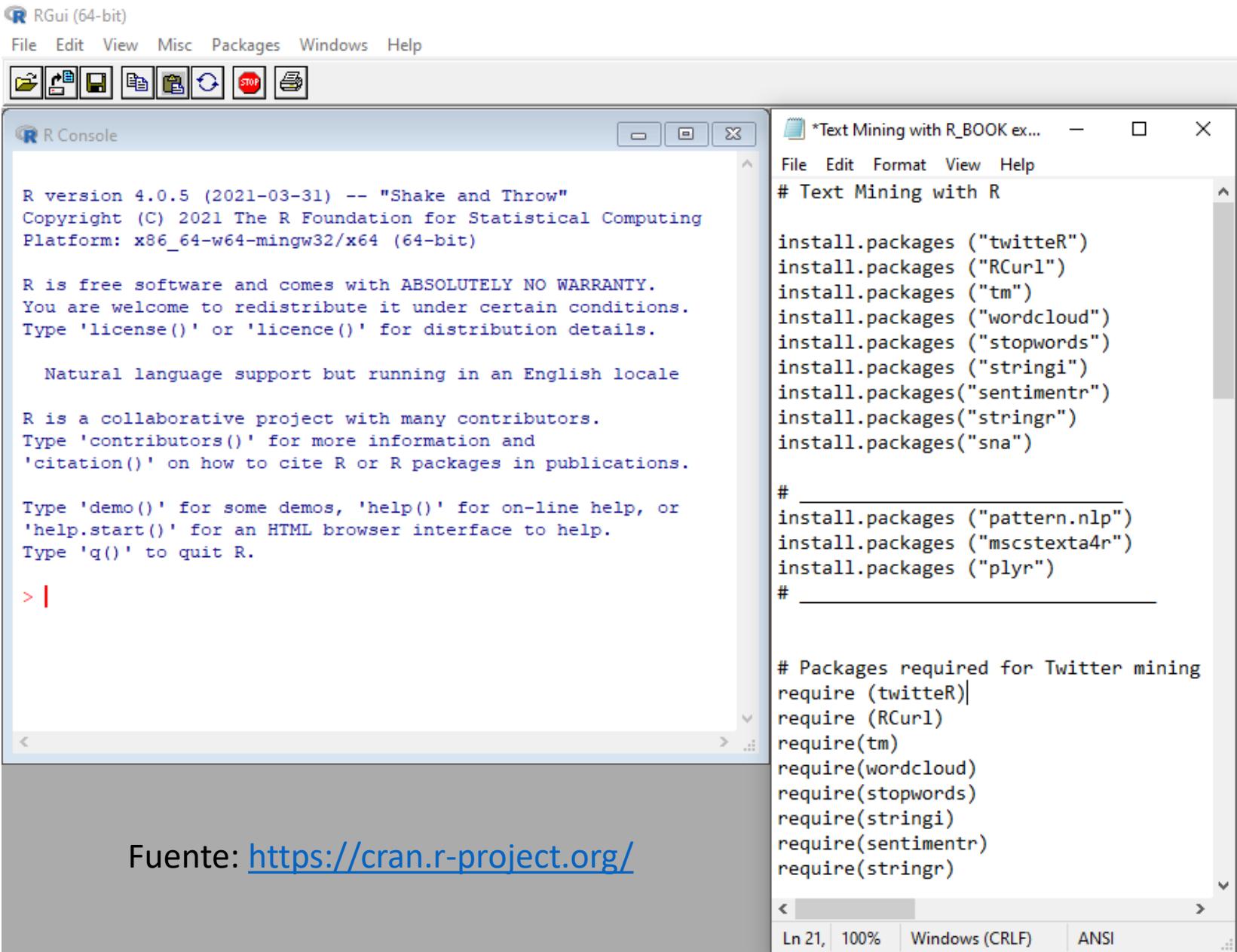
Análisis de sentimientos en “R”

- i. Un paseo por el software “R”
- ii. Paquetería para Ciencia de Datos
- iii. Caso práctico: El estado de ánimo de mi libro
- iv. Codificación en “R”
- v. Corpus del documento
- vi. Palabras de opinión negativa y de opinión positiva
- vii. Sentiment score
- viii. Gráfica de nube de palabras

Minería de datos en Twitter para sentiment analysis

- i. Creación de cuenta para desarrollador: Application Programming Interface (API)
- ii. Paquetería para Twitter Mining
- iii. Caso práctico: El estado de ánimo de los tuiteros respecto a “Biden” y “Trump”
- iv. Codificación en “R” para extraer tweets de la red social
- v. Corpus del documento
- vi. Palabras de opinión negativa y de opinión positiva
- vii. Sentiment score
- viii. Gráfica de nube de palabras

Un paseo por el software “R”



The screenshot shows the RGui (64-bit) interface. On the left is the R Console window, which displays the standard R startup message for version 4.0.5. On the right is a script editor window titled "Text Mining with R_BOOK ex...". The script contains R code for text mining, including package installations and imports for various libraries like twitteR, RCurl, tm, wordcloud, stopwords, stringi, sentimentr, stringr, and sna. It also includes sections for Twitter mining with pattern.nlp, mscstexta4r, and plyr packages.

```
R version 4.0.5 (2021-03-31) -- "Shake and Throw"
Copyright (C) 2021 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (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.

> |
```

```
*Text Mining with R_BOOK ex...
File Edit Format View Help
# Text Mining with R

install.packages ("twitteR")
install.packages ("RCurl")
install.packages ("tm")
install.packages ("wordcloud")
install.packages ("stopwords")
install.packages ("stringi")
install.packages("sentimentr")
install.packages("stringr")
install.packages("sna")

#
install.packages ("pattern.nlp")
install.packages ("mscstexta4r")
install.packages ("plyr")
# _____

# Packages required for Twitter mining
require (twitteR)
require (RCurl)
require(tm)
require(wordcloud)
require(stopwords)
require(stringi)
require(sentimentr)
require(stringr)
```

Fuente: <https://cran.r-project.org/>

Paquetería para Ciencia de Datos

The screenshot shows the official website for the tidyverse, <https://www.tidyverse.org>. The page features a dark header with the word "Tidyverse" in white. Below the header is a navigation bar with links to "Packages", "Blog", "Learn", "Help", and "Contribute". The main content area displays a hexagonal grid of nine R packages: dplyr, ggplot2, forcats, readr, stringr, purrr, and tibble. Each package is represented by a hexagon with its name and a small icon. A yellow banner at the bottom contains the text "Learn the tidyverse" and "See how the tidyverse makes data science faster, easier and more fun with ‘R for Data Science’. Read".

Fuente:
<https://www.tidyverse.org/>

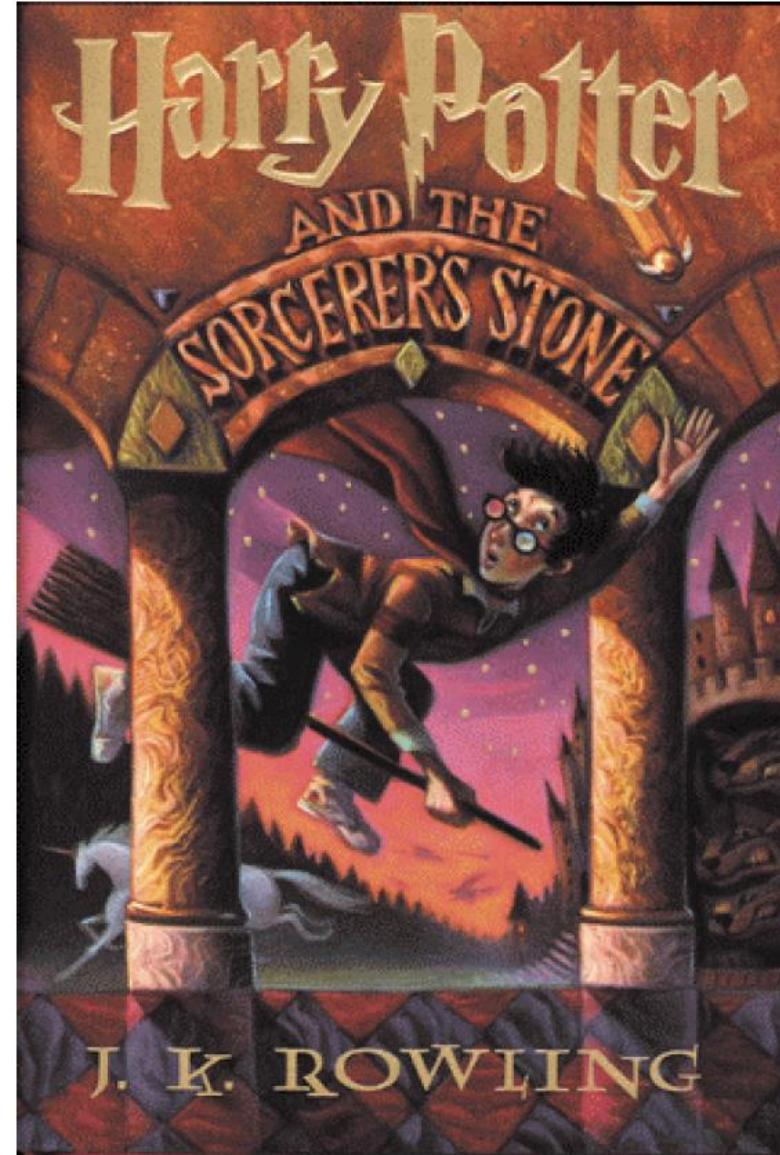
R packages for data science

The tidyverse is an opinionated collection of R packages designed for data science. All packages share an underlying design philosophy, grammar, and data structures.

Install the complete tidyverse with:

```
install.packages("tidyverse")
```

*Caso práctico:
El estado de
ánimo de mi
libro*



Codificación en “R”

```
# Packages required for Twitter mining
require(twitteR)
require(RCurl)
require(tm)
require(wordcloud)
require(stopwords)
require(stringi)
require(sentimentr)
require(stringr)

setwd("C:\\\\Users\\\\chomc\\\\Documents\\\\")

# Sentiment analysis
file.choose()
# Do not forget specify de R work directory in order to read the corpus file properly
folder <- "C:\\\\Users\\\\chomc\\\\Documents\\\\"
list.files(path=folder)
list.files(path=folder, pattern="*.txt")
# Capture your txt book here
filelist <- list.files(path=folder, pattern="Harry Potter and the Sorcerer's Stone_Rowling1997.txt")
filelist
typeof(filelist)
lapply(filelist, FUN=readLines)
corpus2 <- lapply(filelist, FUN=readLines)
lapply (corpus2, FUN=paste, collapse="")
corpus2 <- lapply (corpus2, FUN=paste, collapse="")
```

- **Paquetes requeridos**

- **Leer el libro TXT**
- **Concatenar el texto en un solo vector**
- **Crear corpus de palabras**

Corpus del documento

```
# Cleaning document
gsub(patter="\W", replace=" ", corpus2)
corpus3 <- gsub(patter="\W", replace=" ", corpus2)
gsub(pattern="\d", replace=" ", corpus3)
corpus3 <- gsub(pattern="\d", replace=" ", corpus3)
tolower(corpus3)
corpus3 <- tolower(corpus3)
removeWords(corpus3, stopwords())
corpus3 <- removeWords(corpus3, stopwords())
gsub(pattern="\b[A-z]\b{1}", replace=" ", corpus3)
corpus3 <- gsub(pattern="\b[A-z]\b{1}", replace=" ", corpus3)
stripWhitespace(corpus3)
corpus3 <- stripWhitespace(corpus3)
x11()
wordcloud(corpus3, random.order=F, col=rainbow(50))
```

- Reemplazar caracteres alfanuméricos con espacios en blanco
- Cambiar letras mayúsculas a minúsculas
- Remover palabras comunes que proveen poca información
- Remover múltiples espacios en blanco y dejar uno solo
- Construir gráfico de nube de palabras

```
> stopwords("english")
[1] "i"          "me"         "my"        "myself"      "we"
[6] "our"        "ours"       "ourselves"  "you"        "your"
[11] "yours"      "yourself"    "yourselves" "he"         "him"
[16] "his"        "himself"    "she"        "her"        "hers"
[21] "herself"    "it"         "its"        "itself"     "they"
[26] "them"        "their"      "theirs"     "themselves" "what"
[31] "which"       "who"        "whom"       "this"       "that"
[36] "these"       "those"      "am"         "is"         "are"
[41] "was"         "were"      "be"         "been"      "being"
[46] "have"       "has"        "had"       "having"    "do"
```

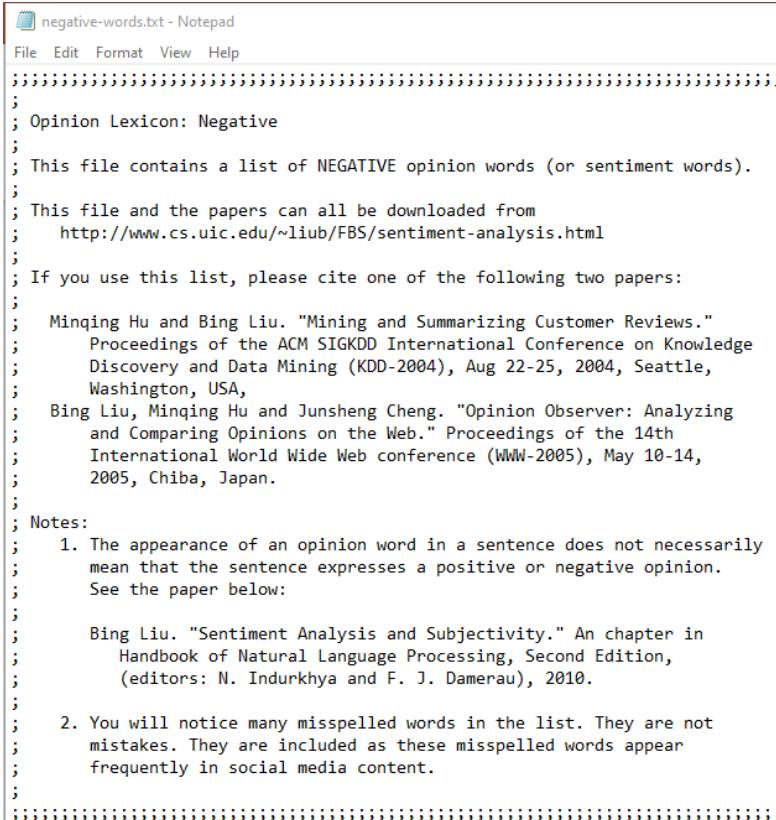
Corpus del documento

```
opinion.lexicon.pos <- scan('positive-words.txt', what='character', comment.char=';')  
opinion.lexicon.neg <- scan('negative-words.txt', what='character', comment.char=';')  
str_split(corpus3, pattern="\s+")  
BOOK_bag <- str_split(corpus3, pattern="\s+")  
class(BOOK_bag)  
BOOK_bag  
lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))))})  
lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.neg))))})
```

- **Scenear archivos de palabras de opinión negativa y de opinión positiva**
- **Separar la bolsa de palabras positivas y negativas encontradas en el corpus**
- **Contar el número de positivas y negativas en el corpus creado**



Palabras de opinión negativa y de opinión positiva

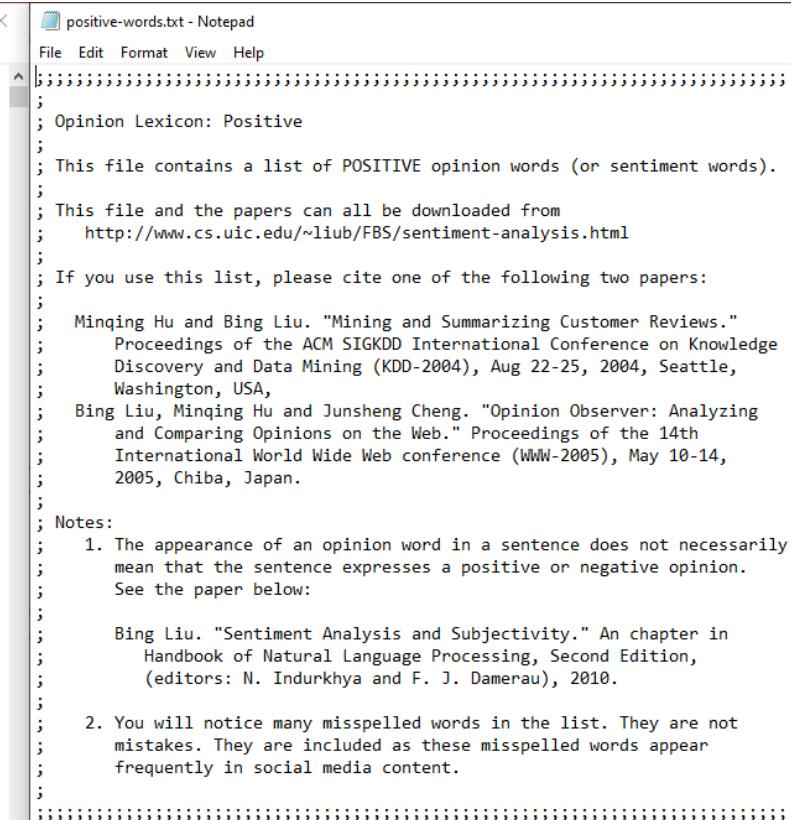


negative-words.txt - Notepad

```
File Edit Format View Help
;;
; Opinion Lexicon: Negative
;
; This file contains a list of NEGATIVE opinion words (or sentiment words).
;
; This file and the papers can all be downloaded from
;   http://www.cs.uic.edu/~liub/FBS/sentiment-analysis.html
;
; If you use this list, please cite one of the following two papers:
;
;   Mingqiang Hu and Bing Liu. "Mining and Summarizing Customer Reviews."
;   Proceedings of the ACM SIGKDD International Conference on Knowledge
;   Discovery and Data Mining (KDD-2004), Aug 22-25, 2004, Seattle,
;   Washington, USA,
;   Bing Liu, Mingqiang Hu and Junsheng Cheng. "Opinion Observer: Analyzing
;   and Comparing Opinions on the Web." Proceedings of the 14th
;   International World Wide Web conference (WWW-2005), May 10-14,
;   2005, Chiba, Japan.
;
; Notes:
;   1. The appearance of an opinion word in a sentence does not necessarily
;      mean that the sentence expresses a positive or negative opinion.
;      See the paper below:
;
;   Bing Liu. "Sentiment Analysis and Subjectivity." An chapter in
;   Handbook of Natural Language Processing, Second Edition,
;   (editors: N. Indurkha and F. J. Damerau), 2010.
;
;   2. You will notice many misspelled words in the list. They are not
;      mistakes. They are included as these misspelled words appear
;      frequently in social media content.
;
;;
2-faced
2-faces
abnormal
abolish
abominable
abominably
abominate
abomination
abort
aborted
aborts
abrade
abrasive
abrupt
abruptly
abscond
absence
absent-minded
```

Fuente:

<https://ptrckprry.com/course/ssd/data/negative-words.txt>



positive-words.txt - Notepad

```
File Edit Format View Help
;;
; Opinion Lexicon: Positive
;
; This file contains a list of POSITIVE opinion words (or sentiment words).
;
; This file and the papers can all be downloaded from
;   http://www.cs.uic.edu/~liub/FBS/sentiment-analysis.html
;
; If you use this list, please cite one of the following two papers:
;
;   Mingqiang Hu and Bing Liu. "Mining and Summarizing Customer Reviews."
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;   Discovery and Data Mining (KDD-2004), Aug 22-25, 2004, Seattle,
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;   (editors: N. Indurkha and F. J. Damerau), 2010.
;
;   2. You will notice many misspelled words in the list. They are not
;      mistakes. They are included as these misspelled words appear
;      frequently in social media content.
;
;;
a+
abound
abounds
abundance
abundant
accessible
accessible
acclaim
acclaimed
acclamation
accolade
accolades
accommodative
accommodative
accomplish
accomplished
accomplishment
accomplishments
```

Fuente:

<https://ptrckprry.com/course/ssd/data/positive-words.txt>

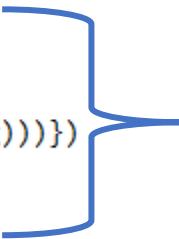
Sentiment score: Harry Potter

```
# Sentiment score  
# Positive minus Negative words  
lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})  
score <- lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})  
score
```

RGui (64-bit)
File History Resize Windows



```
R Gui (64-bit)  
File History Resize Windows  
  
R Console  
  
> lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))))})  
[[1]]  
[1] 2015  
  
> lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.neg))))})  
[[1]]  
[1] 2345  
  
>  
>  
> # Sentiment score  
> # Positive minus Negative words  
> lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})  
[[1]]  
[1] -330  
  
> score <- lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})  
> score  
[[1]]  
[1] -330
```



Obtener la diferencia del número de palabras positivas menos negativas = SENTIMENT SCORE

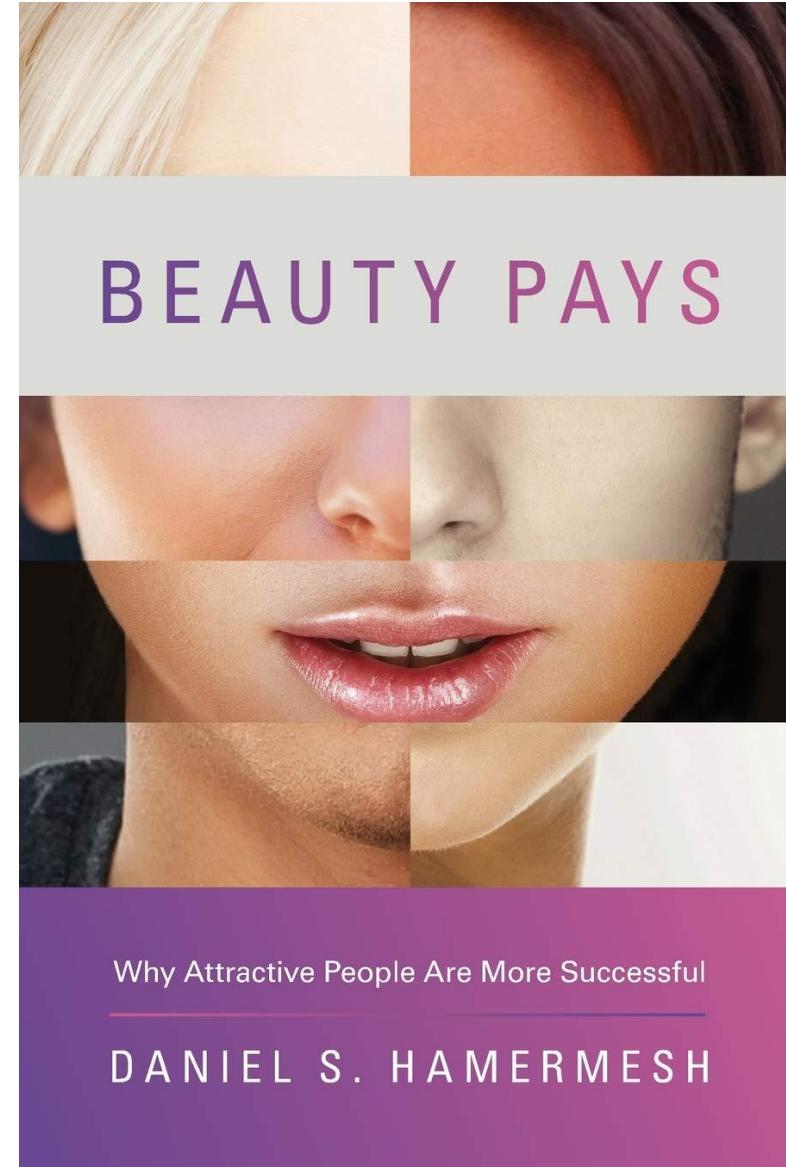


Gráfica de nube de palabras



- ¿Es Harry Potter un libro triste?

*Caso
práctico: El
estado de
ánimo de mi
libro*



Sentiment score: Beauty Pays

RGui (64-bit)

File Edit View Misc Packages Windows Help

STOP

R Console

```
> lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))))})
[[1]]
[1] 2177

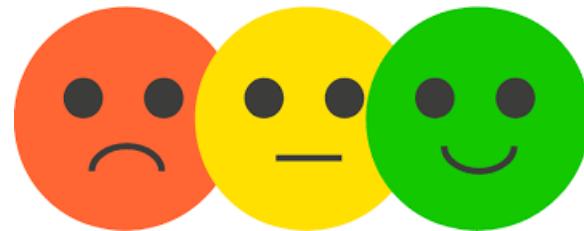
> lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.neg))))})
[[1]]
[1] 974

>
>
> # Sentiment score
> # Positive minus Negative words
> lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})
[[1]]
[1] 1203

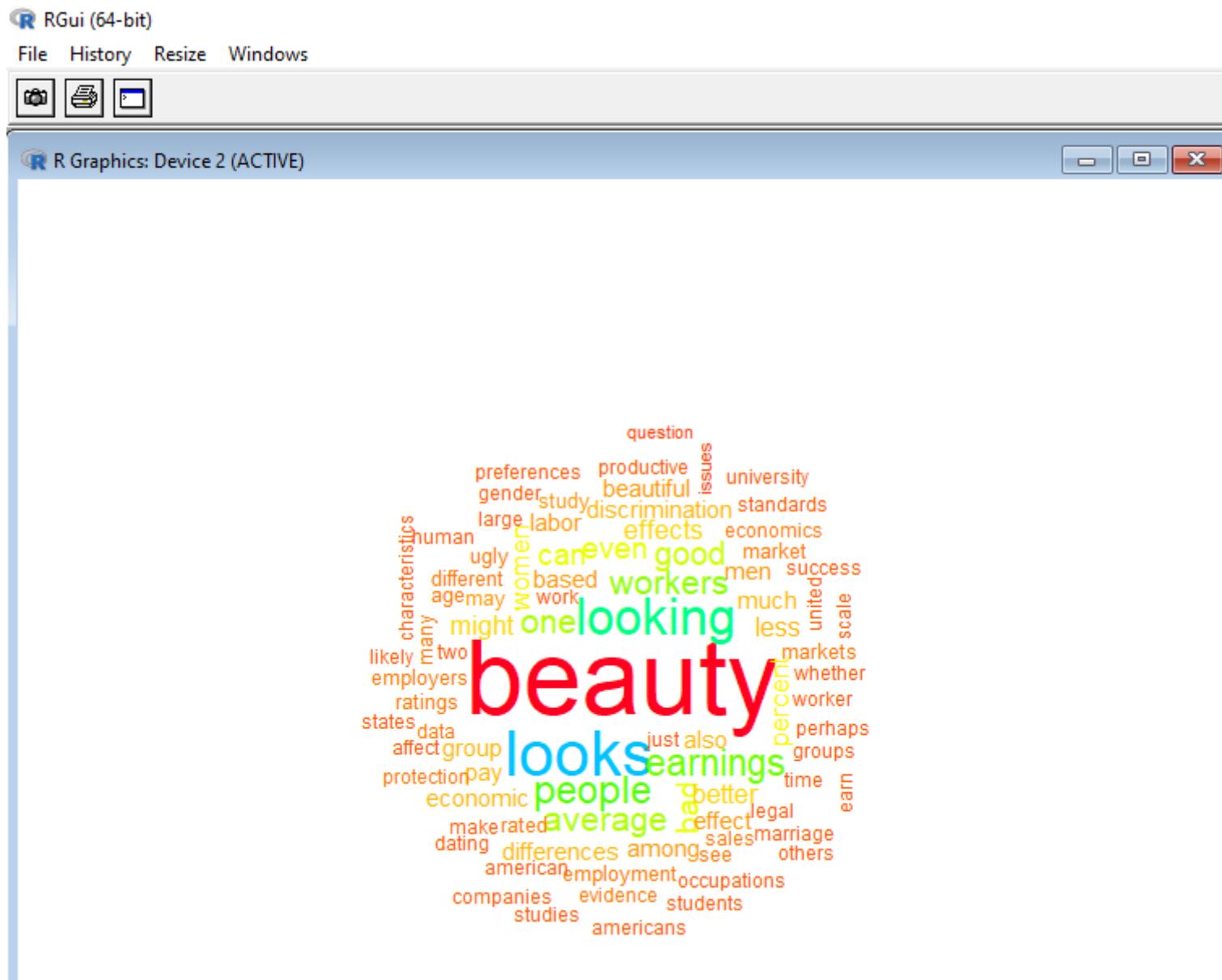
> score <- lapply(BOOK_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})
> score
[[1]]
[1] 1203
```



- Obtener la diferencia del número de palabras positivas menos negativas = SENTIMENT SCORE

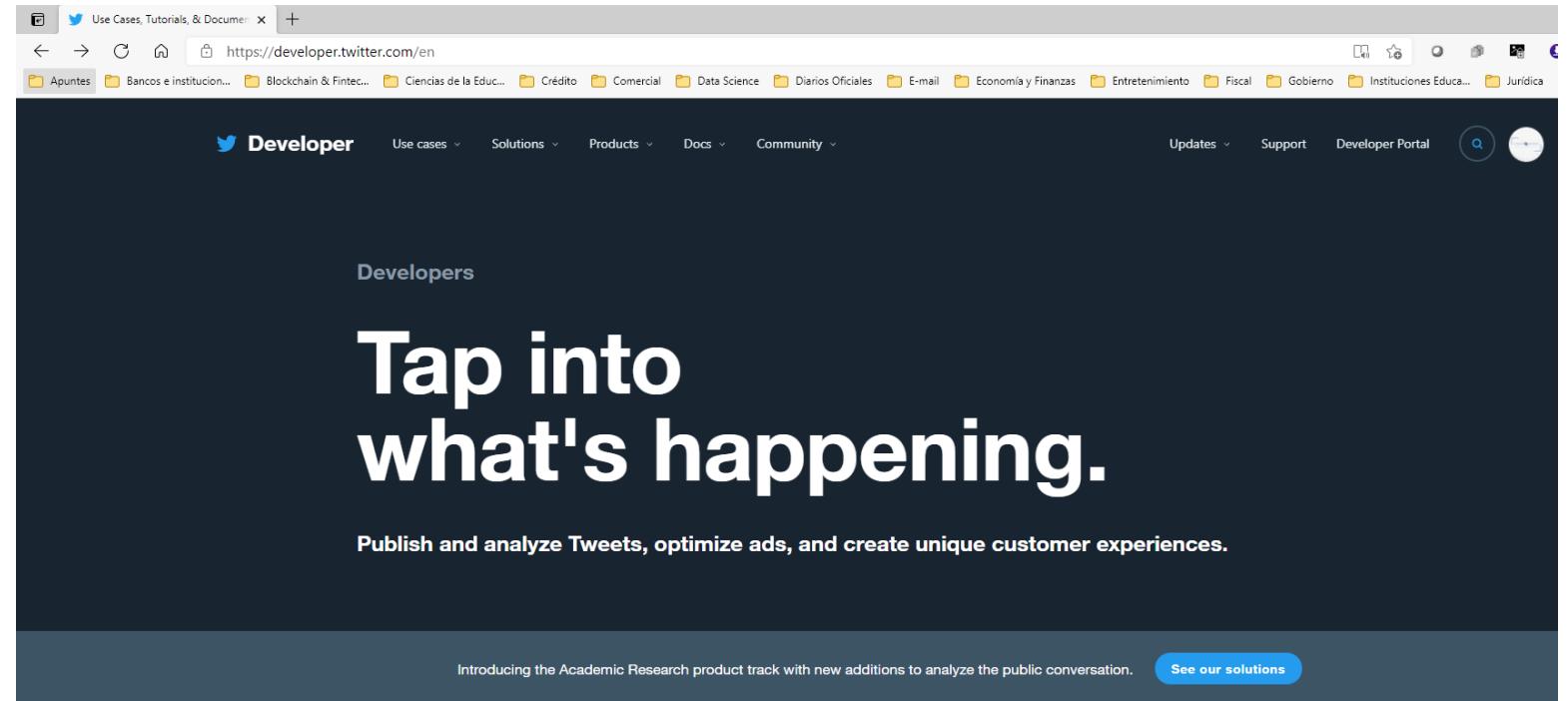


Gráfica de nube de palabras



- ¿Estereotipos?

Minería de datos en Twitter para sentiment analysis



Start with a use case

Listen &
analyze

Advertise

Publish &
curate

Engage

Creación de cuenta para desarrollador: Application Programming Interface (API)

The screenshot shows a web browser window for the Twitter Developers portal at <https://developer.twitter.com/en/portal/apps/15730073/settings>. The left sidebar lists categories like Apuntes, Bancos e institucion..., Blockchain & Fintec..., Ciencias de la Educ..., Crédito, Comercial, Data Science, Diarios Oficiales, E-mail, Economía y Finanzas, and Entre. The main content area displays the 'App Details' section for the application 'A&F Twitter Mining'. The app's name is listed as 'A&F Twitter Mining', its ID as '15730073', and its description as 'Sentiment analysis from Twitter Mining. Make insights from tweets on trending topics, visualize Wordcloud at once.' Below this, the 'App permissions' section is shown, indicating 'Read and Write' with the sub-permission 'Read + Post Tweets and profile information'.

Paquetería para Twitter Mining

RGui (64-bit)

File Edit View Misc Packages Windows Help

R Console

```
R version 4.0.5 (2021-03-31) -- "Shake and Throw"
Copyright (C) 2021 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (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.
```

> |



```
# Packages required for Twitter mining
require(twitteR)
require(RCurl)
require(tm)
require(wordcloud)
require(stopwords)
require(stringi)
require(sentimentr)
require(stringr)

# require(mscstexta4r)
# require(plyr)

# Twitter API authorization process
consumer_key <- consumer_secret
access_token <- acces_secret <-
setup_twitter_oauth(consumer_key, consumer_secret, access_token, acces_secret)
```

Twitter Mining with R_Biden example.txt - Notepad

File Edit Format View Help

- Paquetes requeridos
- Application Programming Interface (API)

CLAVES DE ACCESO

Caso práctico: El estado de ánimo de los tuiteros respecto a “Biden”, “Trump” u otro tópico de interés



Codificación en “R” para extraer tweets de la red social

```
# Searching example for the word "Biden" (it also includes "Biden" in lowercase or with stress mark)
# resultType="recent"    most recent tweets
# resultType="popular"   most popular tweets
# resultType="mixed"     most popular tweets plus real time tweets

Biden_tweets <- searchTwitter("Biden", n=1000, lang="en", resultType="mixed")
# Biden_tweets
str(Biden_tweets)
Biden_tweets [1:3]
class(Biden_tweets)

# Converting list of tweets into vector
Biden_text <- sapply(Biden_tweets, function(x) x$getText())
str(Biden_text)

# Creating corpus from vector tweets

Biden_corpus <- stri_trans_general(Biden_text, "latin-ascii")

# To remove emojis
Biden_corpus <- iconv(Biden_corpus, "ASCII", "UTF-8", sub="byte")
```

- Recuperar un número de tweets que contengan la palabra “Biden”
- Elegir entre tweets recientes, populares o una mezcla de ambos
- Recuperar tweets en idioma Inglés

- Crear el listado de tweets en un vector
- Crear un corpus de palabras
- Remover emojis

Codificación en “R” para extraer tweets de la red social

Documentation

Search the docs

Twitter API

Getting started

Tutorials

Tools and libraries

Migrate

API reference index

The new Twitter API v2

Fundamentals

Tweets

Users

Enterprise Grip 2.0

Fundamentals

Standard search operators

The query can have operators that modify its behavior. the available operators are:

Operator	Finds Tweets...
watching now	containing both “watching” and “now”. This is the default operator.
“happy hour”	containing the exact phrase “happy hour”.
love OR hate	containing either “love” or “hate” (or both).
beer -root	containing “beer” but not “root”.
#haiku	containing the hashtag “haiku”.
from:interior	sent from Twitter account “interior”.
list:NASA/astronauts-in-space-now	sent from a Twitter account in the NASA list astronauts-in-space-now
to:NASA	a Tweet authored in reply to Twitter account “NASA”.
@NASA	mentioning Twitter account “NASA”.
politics filter:safe	containing “politics” with Tweets marked as potentially sensitive removed.
puppy filter:media	containing “puppy” and an image or video.
puppy -filter:retweets	containing “puppy”, filtering out retweets
puppy filter:native_video	containing “puppy” and an uploaded video, Amplify video, Periscope, or Vine.
puppy filter:periscope	containing “puppy” and a Periscope video URL.
puppy filter:vine	containing “puppy” and a Vine.

Codificación en “R” para extraer tweets de la red social

The screenshot shows the Twitter Developer Documentation page for the Twitter API. On the left, there's a sidebar with links like 'Getting started', 'Tutorials', 'Tools and libraries', 'Migrate', and 'API reference index'. Below that is 'The new Twitter API v2' with sections for 'Fundamentals', 'Tweets', and 'Users'. At the bottom is 'Enterprise Gnip 2.0' and another 'Fundamentals' section.

The main content area displays a table of search operators:

puppy filter:vine	containing “puppy” and a Vine.
puppy filter:images	containing “puppy” and links identified as photos, including third parties such as Instagram.
puppy filter:twimg	containing “puppy” and a pic.twitter.com link representing one or more photos.
hilarious filter:links	containing “hilarious” and linking to URL.
puppy url:amazon	containing “puppy” and a URL with the word “amazon” anywhere within it.
superhero since:2015-12-21	containing “superhero” and sent since date “2015-12-21” (year-month-day).
puppy until:2015-12-21	containing “puppy” and sent before the date “2015-12-21”.
movie -scary :)	containing “movie”, but not “scary”, and with a positive attitude.
flight :(containing “flight” and with a negative attitude.
traffic ?	containing “traffic” and asking a question.

A note below the table says: "Please, make sure to [URL encode](#) these queries before making the request. There are several online tools to help you to do that, or you can search at [twitter.com/search](#) and copy the encoded URL from the browser’s address bar. The table below shows some example mappings from search queries to URL encoded queries:

Search query	URL encoded query
#haiku #poetry	%23haiku%23poetry
“happy hour” :)	%22happy%20hour%22%20%3A%29

Note that the space character can be represented by “%20” or “+” sign.

Additional parameters

Fuente:
<https://developer.twitter.com/en/docs/twitter-api/v1/rules-and-filtering/search-operators>

Sentiment score: Biden

R Gui (64-bit)

File Edit View Misc Packages Windows Help

STOP

R Console

```
> lapply(Biden_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))))})
[[1]]
[1] 544

> lapply(Biden_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.neg))))})
[[1]]
[1] 672

>
>
> # Sentiment score
> # Positive minus Negative words
> lapply(Biden_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})
[[1]]
[1] -128

> score <- lapply(Biden_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})
> score
[[1]]
[1] -128
```



- Obtener la diferencia del número de palabras positivas menos negativas = SENTIMENT SCORE



Gráfica de nube de palabras



- ¿Aún no prende Biden en el ánimo de los estadounidenses?

Sentiment score: Trump

R Gui (64-bit)

File Edit View Misc Packages Windows Help

STOP

R Console

```
> lapply(Trump_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))))})
[[1]]
[1] 1110

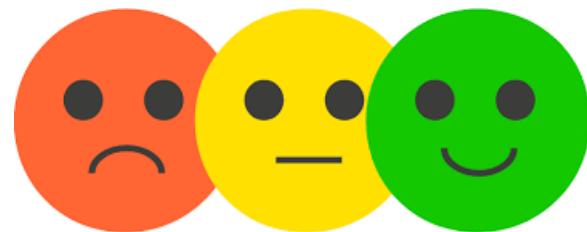
> lapply(Trump_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.neg))))})
[[1]]
[1] 598

>
>
> # Sentiment score
> # Positive minus Negative words
> lapply(Trump_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})
[[1]]
[1] 512

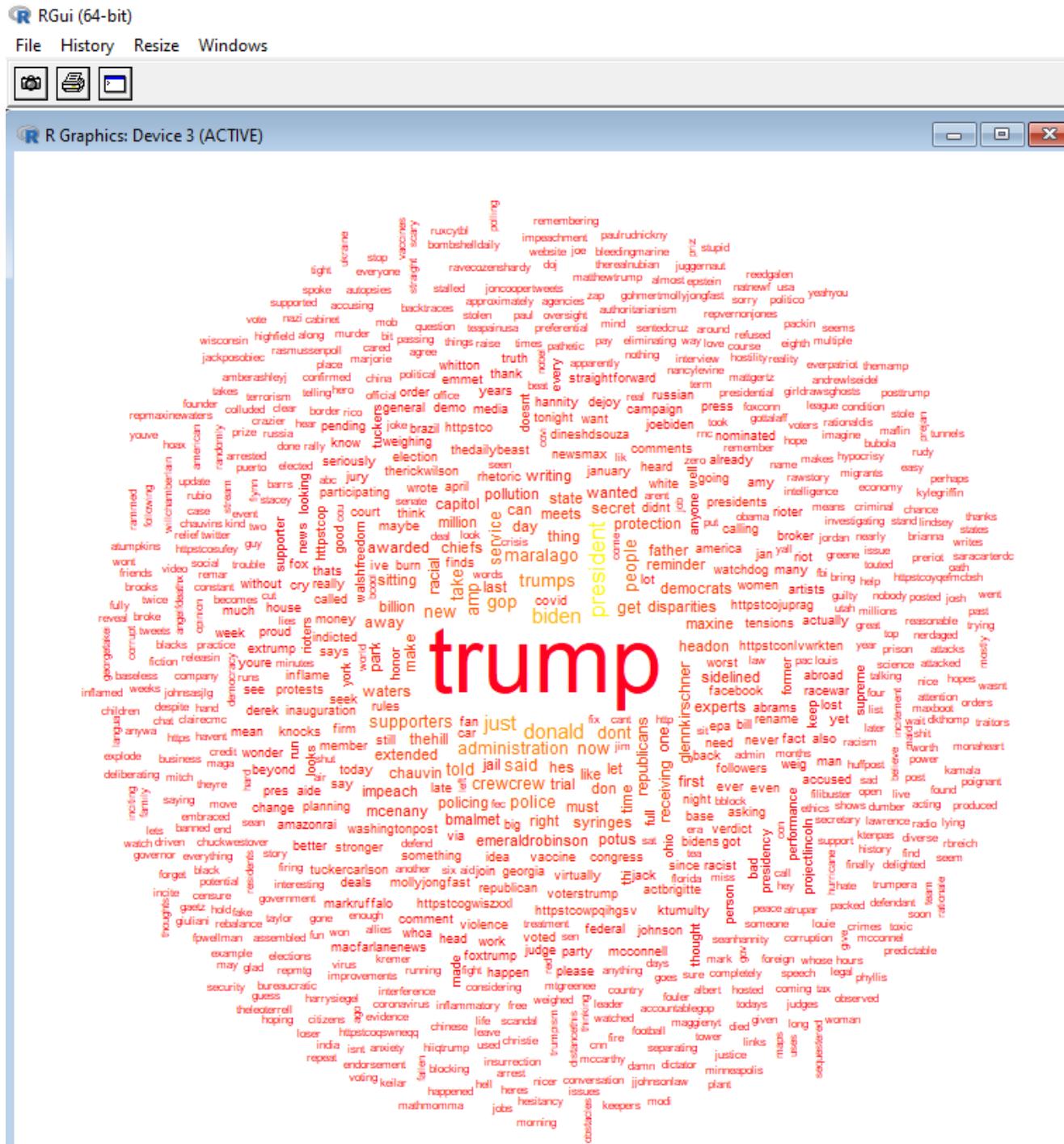
> score <- lapply(Trump_bag, function(x) {sum(!is.na(match(x,opinion.lexicon.pos))) - sum(!is.na(match(x,opinion.lexicon.neg))))})
> score
[[1]]
[1] 512
```



- Obtener la diferencia del número de palabras positivas menos negativas = SENTIMENT SCORE



Gráfica de nube de palabras



¿Trump sigue fuerte en el ánimo de los estadounidenses?

Más herramientas...

Fuente:

[Actuaría & Finanzas Consulting](#)
[\(@actuariayfinanz\) / Twitter](#)



DTE NLU Demo x Trump's Taxes Show Chronic Loss x +

https://www.ibm.com/demos/live/natural-language-understanding/self-service/home

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SAMPLE INDUSTRY DOMAINS TRY YOUR OWN Legal Financial Media Input Text URL

The Times obtained Donald Trump's tax information extending over more than two decades, revealing struggling properties, vast write-offs, an audit battle and hundreds of millions in debt coming due. Donald J. Trump paid \$750 in federal income taxes the year he won the presidency. In his first year in the White House, he paid another \$750. He had paid no income taxes at all in 10 of the previous 15 years — largely because he reported losing much more money than he made. As the president wages a re-election campaign that polls say he is in danger of losing, his

Neutral Entity Positive Entity Negative Entity

Edit URL

Extraction Classification Linguistics Custom

Sentiment Emotion Categories

Full Document NEGATIVE -0.46

Entity Sentiment Scores

	NEGATIVE	POSITIVE
Mr. Trump	-0.48	
The Times	-0.59	
Mr. Garten	-0.77	
I.R.S.	-0.6	
\$750	-0.85	
The Trump Organization	-0.28	
\$2 million	-0.74	
\$100 million	-0.57	
\$72.9 million	-0.78	
President Trump	-0.86	
\$427.4 million	0.73	

JSON</> FEEDBACK

Más herramientas...

Fuente:

<https://www.ibm.com/demos/live/natural-language-understanding/self-service/home>

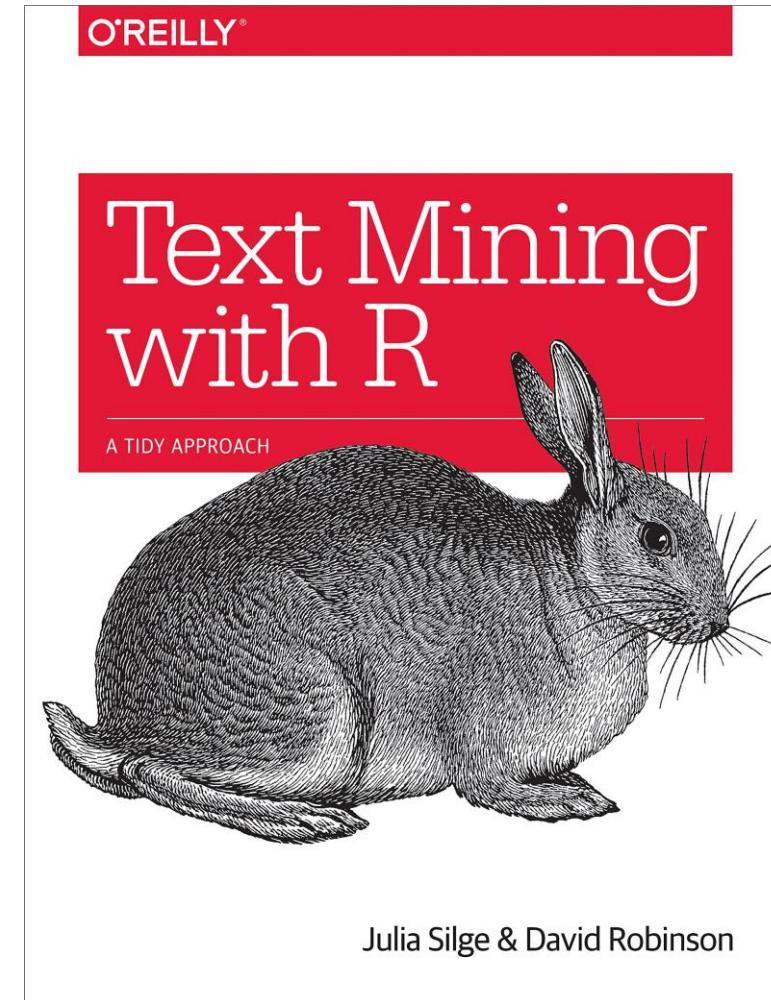
<https://www.nytimes.com/interactive/2020/09/27/us/donald-trump-taxes.html>

Type here to search

Cookie Preferences

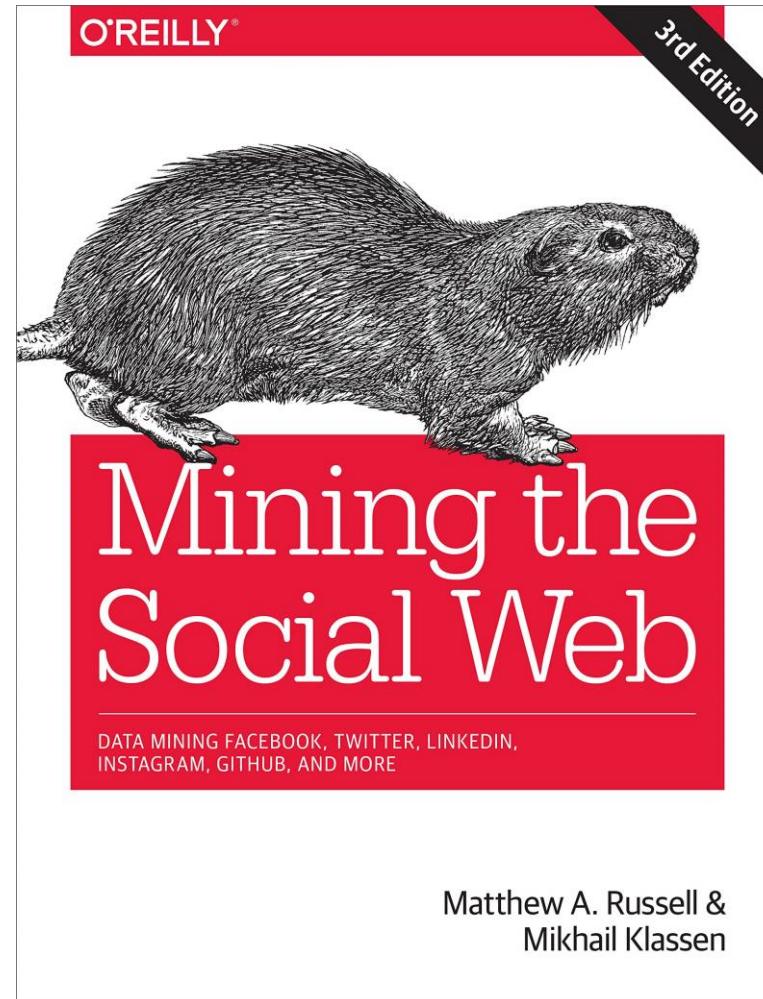
Más herramientas...

- Silge (2017) Text Mining with R. A Tidy Approach. O'Reilly Media, Inc., USA.



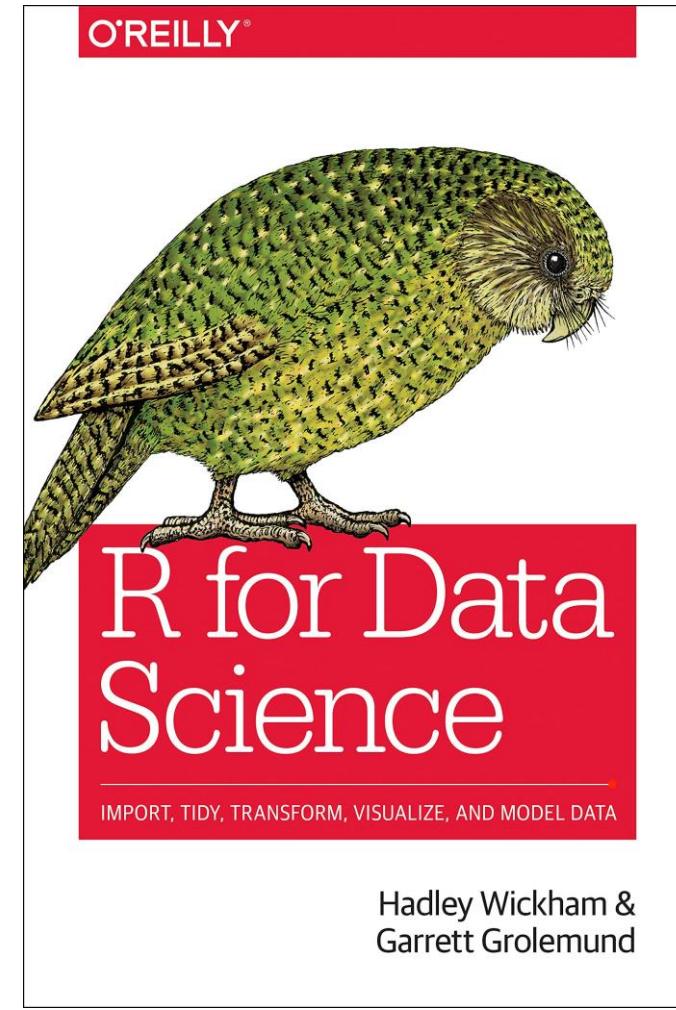
Más herramientas...

- Rusell (2019) Mining the Social Web. Data Mining Facebook, Twitter, LinkedIn, Instagram, GitHub and More. O'Reilly Media, Inc., Canada.



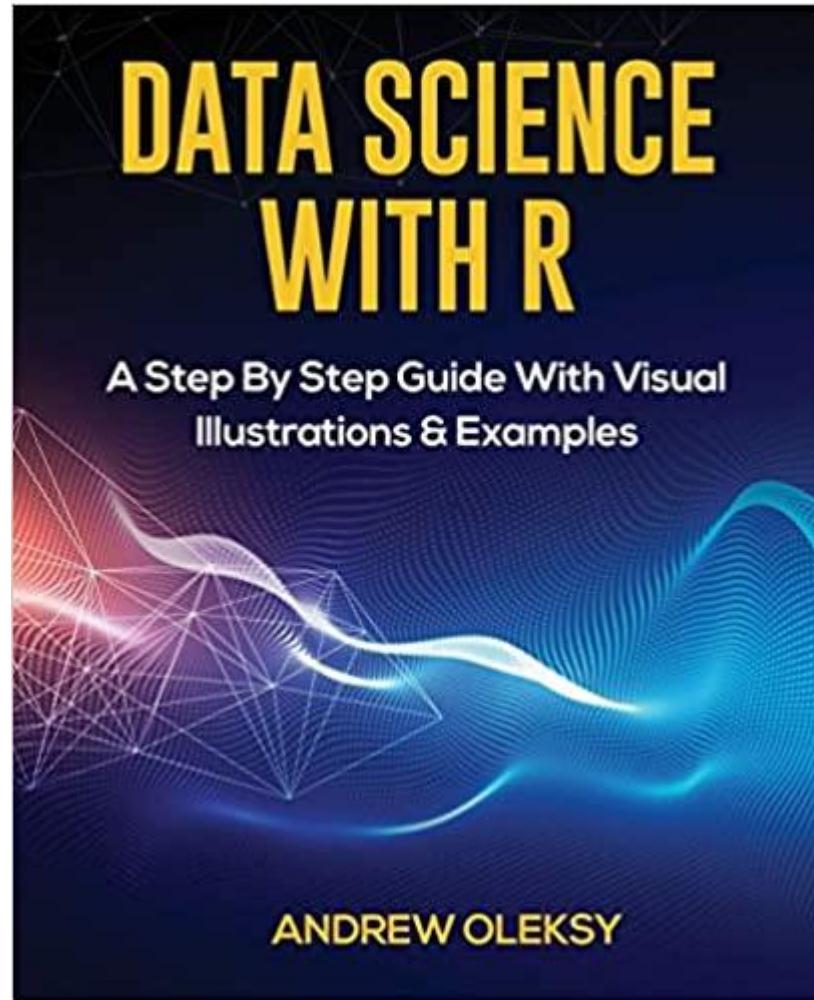
Más herramientas...

- Wickham (2017) R for Data Science. Import Tidy Transform Visualize and Model Data. O'Reilly Media, Inc., USA.



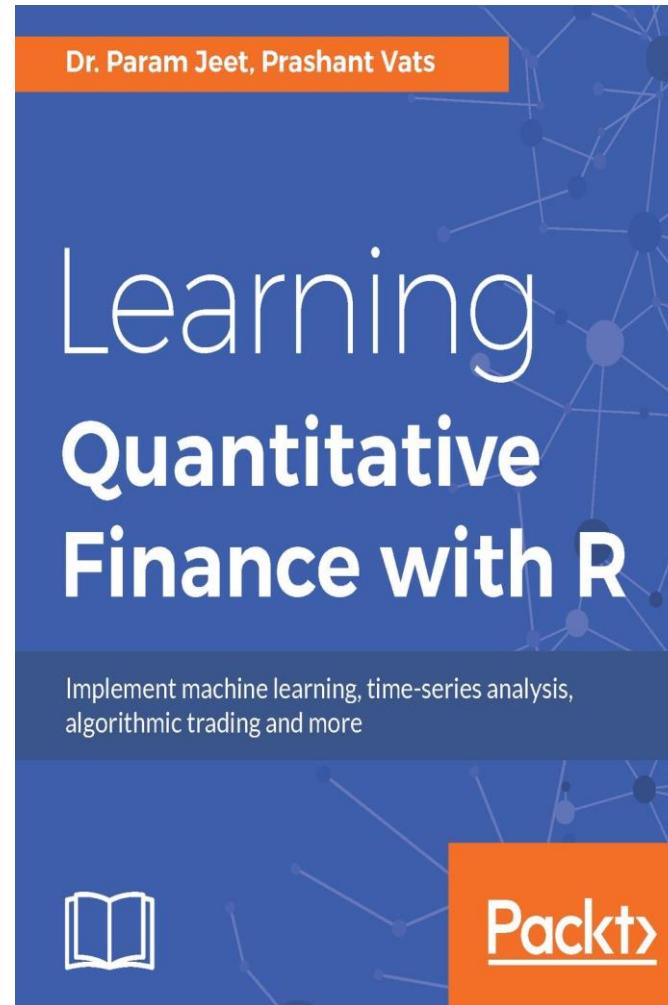
Más herramientas...

- Oleksy (2018) Data Science with R. A Step by Step Guide with Visual Illustrations and Examples. By Andrew Oleksy.



Más herramientas...

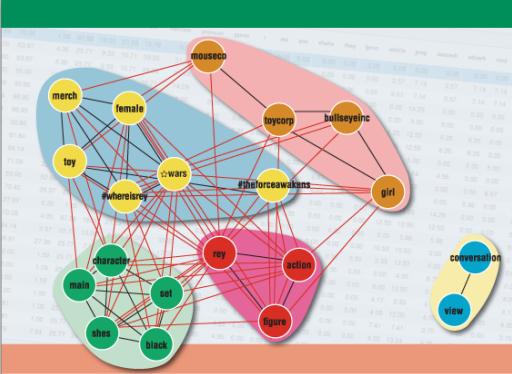
- Jeet (2017) Learning Quantitative Finance with R. Implement machine learning time-series analysis algorithmic trading and more. Packt Publishing. UK.



¿Por qué es importante la investigación?

Por la importancia del flujo de datos que rige al mundo globalizado y su impacto en actividades que van desde la operación de las Bolsas de Valores, el internet de las cosas, estudio del comportamiento del consumidor, cadenas de suministro, hasta la vigilancia de redes sociales.





Social Analytics
Network and Text Methods
with NodeXL and R

Shalia Miranda



DATA STRATEGY

Cómo beneficiarse de un mundo de Big Data, Analytics e Internet de las Cosas.

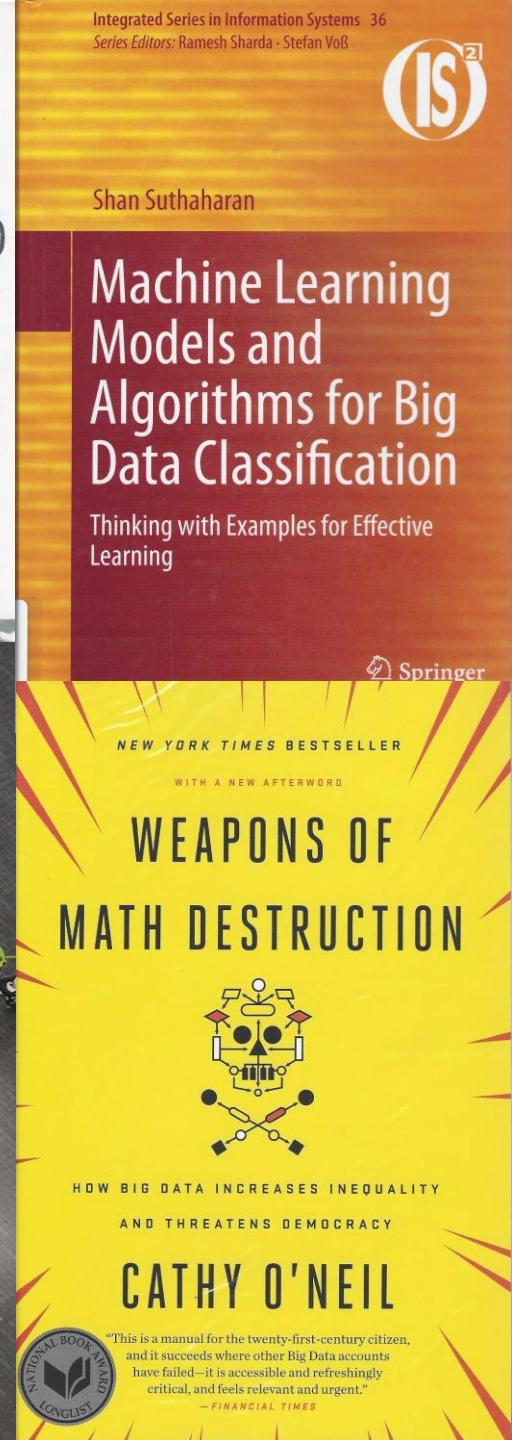
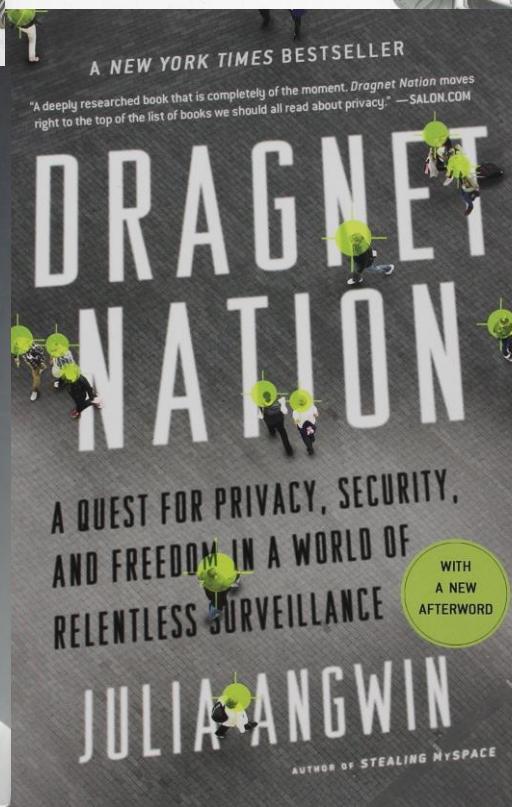
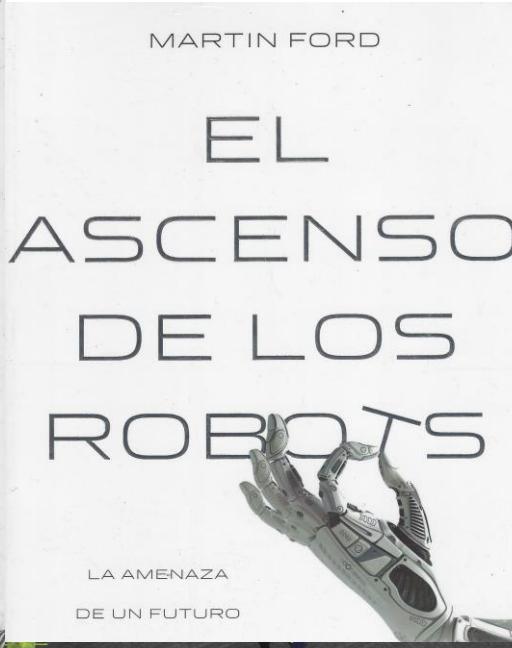
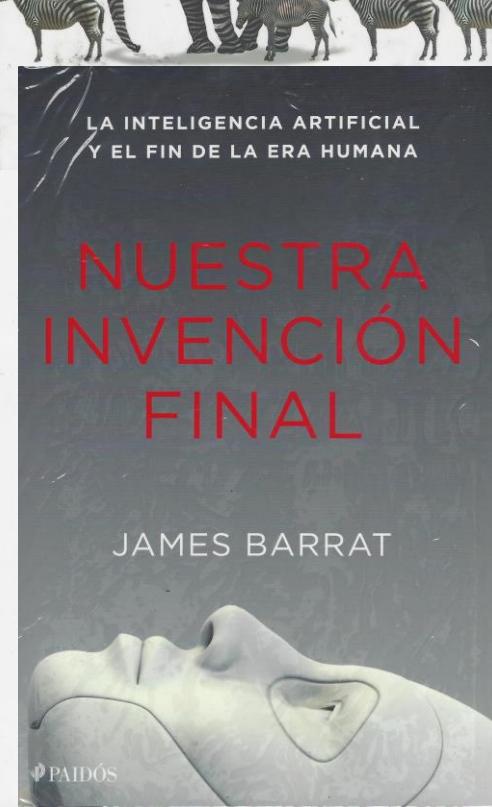
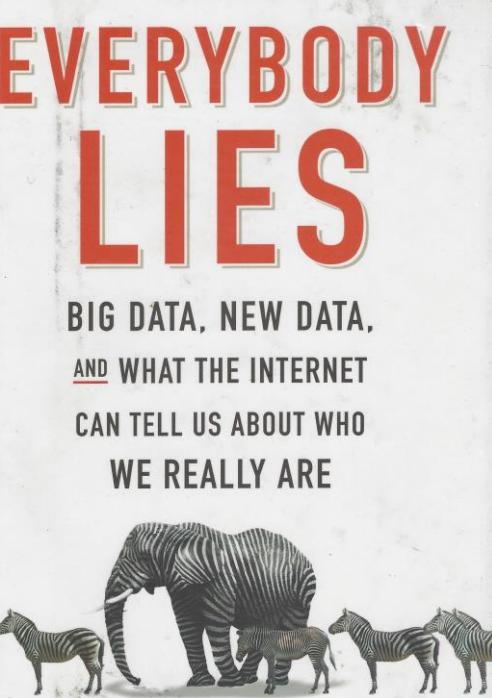
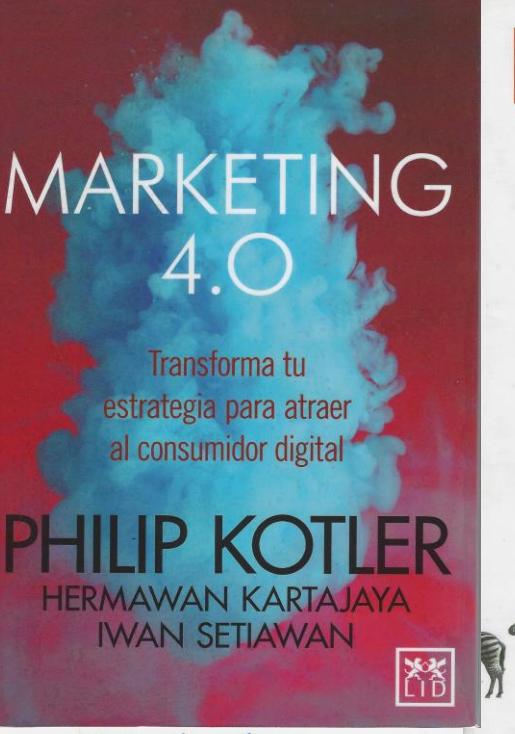
BERNARD MARR

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—FINANCIAL TIMES

Conclusiones

- Las redes sociales han madurado al grado que los gobiernos están formulando políticas sobre cómo deben ser colectados, compartidos y usados estos datos.
- La minería de redes sociales es tema de interés para emprendedores, risk managers, tecnólogos y hackers. Basta revisar el impacto de Twitter en temas políticos, económicos y financieros.

Conclusiones

- Al trabajar en Analytics y Ciencia de Datos es evidente que los datos se generan todo el tiempo y cada vez con mayor rapidez. Los analistas están acostumbrados a trabajar con datos tabulares, generalmente numéricos; sin embargo, actualmente gran parte de los datos es no estructurado y con alto contenido de texto.
- “R” brinda excelentes recursos para ejecutar código para la interpretación de lenguaje natural; por lo que es buen punto de partida para aprender otros lenguajes como Python y Julia.

Conclusiones

- Trabajar texto como si fueran bases de datos o palabras individuales permite manipular, resumir y visualizar las características del texto integrando procesamiento de lenguaje natural.
- Finalmente, realizar hallazgos y construir una narrativa adecuada para comunicarlos son habilidades fundamentales en Ciencia de Datos. **El principal ingrediente es la curiosidad.**



Análisis de Sentimientos en Twitter

With R programming

Dr. Robert Hernández Martínez
robert@actuariayfinanzas.net

Actualización: Julio 2022



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