Mining data from social media with R

A very brief introduction

Twitter

- 1. Social Media with 330 millions active monthly users in 2019
- 2. Differently from the other social media, in Twitter all the posts are public and visible also for no-registered users
- 3. Tweets can be freely mined using Twitter's application programming interface (with some temporal limitations)



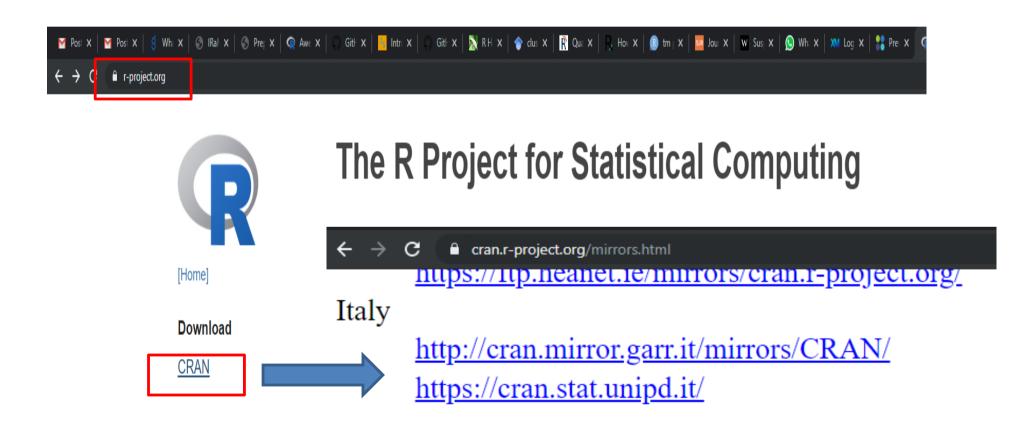
Benefits

- Tweets analysis is a powerful tool for studying collective people behavior in real social contexts;
- 2. Support for explorative purpoise and hypotheses generations;
- 3. May permits and test theoretical integration between Sociological and Cognitive Models.

BUT

The Big Data Challenge The creation of tweets is faster than their analysis, they have a lot of diverse and noisy information (text, images, audios, videos, which are hard to interpret).

How to mine data from twitter with R a step-by-step wannabe guide STEP 1 → DOWNLOAD R



How to mine data from twitter with R a step-by-step wannabe guide STEP 1 → DOWNLOAD R (and then install)

The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, Windows and Mac users most likely want one of these versions of R:

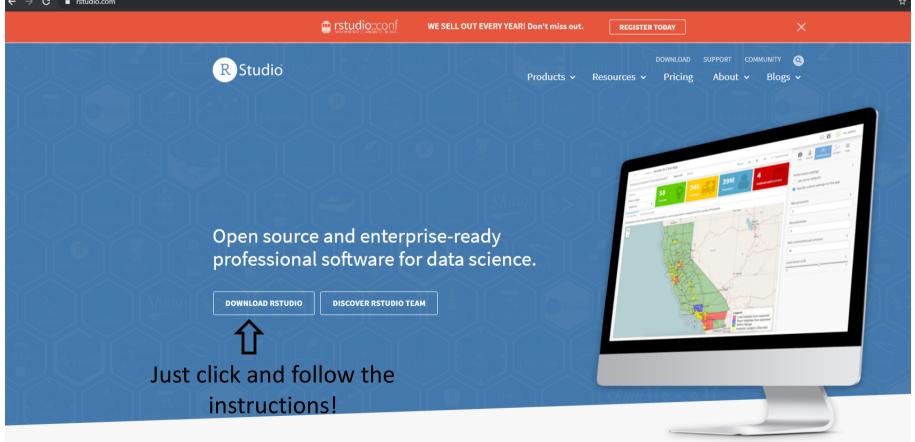
- Download R for Linux
- Download R for (Mac) OS X
- <u>Download R for Windows</u>

The installation is super easy, so I decided to skip that part

How to mine data from twitter with R a step-by-step wannabe guide STEP 2 → DOWNLOAD Rstudio Not really necessary but Rstudio is great and I use Rstudio. You should do the same!

How to mine data from twitter with R a step-by-step wannabe guide

$\frac{\text{STEP 2} \rightarrow \text{DOWNLOAD Rstudio}}{6 \rightarrow 6}$



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How to mine data from twitter with R a step-by-step wannabe guide

STEP 3 \rightarrow install and load rtweet package

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How to mine data from twitter with R a step-by-step wannabe guide STEP 3 → install and load rtweet package

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How to mine data from twitter with R a step-by-step wannabe guide STEP 3 → install and load rtweet package

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How to mine data from twitter with R a step-by-step wannabe guide STEP 4 → Let's start!

```
Function 1 \rightarrow Search tweet!
```

```
## search for 18000 tweets using the metoo hashtag
rt <- search_tweets(
    "#MeToo", n = 18000, include_rts = FALSE
)</pre>
```

```
## search for 250,000 tweets containing the
word data
rt <- search_tweets(
    "data", n = 250000, retryonratelimit = TRUE
)</pre>
```

How to mine data from twitter with R a step-by-step wannabe guide

STEP 4 \rightarrow Leeeet's staaaaart!

```
Function 2 \rightarrow Plotting geo-coordinates!
```

```
## search for 10,000 tweets sent from the US
rt <- search_tweets(
    "lang:en", geocode = lookup_coords("usa"), n = 10000
)</pre>
```

create lat/Ing variables using all available tweet and profile geo-location data
rt <- lat_Ing(rt)</pre>

```
## plot state boundaries
par(mar = c(0, 0, 0, 0))
maps::map("state", lwd = .25)
```

```
## plot lat and lng points onto state map
with(rt, points(lng, lat, pch = 20, cex = .75, col = rgb(0, .3, .7, .75)))
```



How to mine data from twitter with R a step-by-step wannabe guide STEP 4 → Leeeet's staaaaart!

Function 3 \rightarrow Collect the stream of tweet in real time!

```
## random sample for 30 seconds (default)
rt <- stream_tweets("")</pre>
```

stream tweets from USA for 60 seconds
rt <- stream_tweets(lookup_coords("usa"), timeout = 60)</pre>

How to mine data from twitter with R a step-by-step wannabe guide

STEP 4 \rightarrow Leeeet's staaaaart!

Function 4 \rightarrow Extract followers and following!

get user IDs of accounts followed by Matteo Salvini
Matteo_friends <- get_friends("@matteosalvinimi")</pre>

lookup data on those accounts
Matteo_friends_data <- lookup_users(Matteo_friends\$user_id)</pre>

get user IDs of accounts following Matteo Salvini
Matteo_followers <- get_followers("@matteosalvinimi", n = 75000)</pre>

lookup data on those accounts
Matteo_followers_data <- lookup_users(Matteo_followers\$user_id)</pre>

How to mine data from twitter with R a step-by-step wannabe guide

STEP 4 \rightarrow Leeeet's finish!

Function 4 \rightarrow Extract users' timeline!

#Timeline of politicians

tmls <- get_timelines(c("@GiorgiaMeloni", "@matteosalvinimi", "@luigidimaio","@nzingaretti","@emmabonino","@lauraboldrini","@matteorenzi"), n = 32000)

And now save your data in a .csv file

write.csv2(tmls,"filename.csv")
#change name if you want different files





Reddit

- 1. Social Media with 48 millions active monthly users in 2019
- 2. Posts are public
- 3. Comments and discussions can be freely mined using Reddit's application programming interface (with some limitations)
- 4. Discussions usually are way longer than in Twitter (but less users).



How to mine data from twitter Reddit with R a step-by-step wannabe guide

Install and load the new library

install.packages ("RedditExtractoR")
library(RedditExtractoR)

Look for links containing the word Emergency

links <- reddit_urls(search_terms = "Emergency", page_threshold = 2, cn_threshold= , subreddit =, regex_filter =, sort_by =)

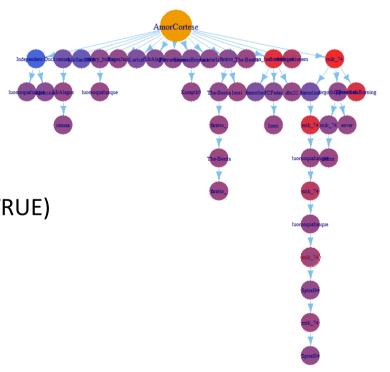
Look for contents contained in the links
content <- reddit_content(links\$URL)</pre>

How to mine data from twitter Reddit with R a step-by-step wannabe guide

You can also obtain a network of the discussion!

Look for content in one discussion
content1 <- reddit_content(links\$URL[1])</pre>

Plot the network
graph <- construct_graph(content1, plot = TRUE)</pre>



ria, Gino Strada; "Accordo tra Emergency e Protezione Civile per rispondere all'emergenza sanitari

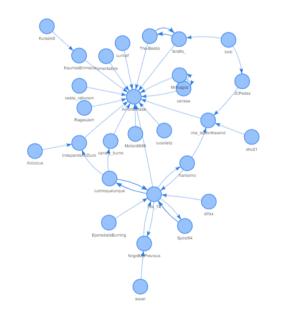
How to mine data from twitter Reddit with R a step-by-step wannabe guide

You can also obtain a network of the users!

Plot the network

graph <- construct_graph(content1, plot = TRUE)</pre>

User Network



My contacts if you want some help

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Thank you for your attention!

A little help!

https://psicologiapd.fra1.qualtrics .com/jfe/form/SV_aeBH64H2qS2q VNz