[Mastodon](https://joinmastodon.org/" \t "_blank) is a decentralized microblogging platform.

We can analyse some data and directly post our findings to a Mastodon instance.

For example we can plot the different [TLDs](https://en.wikipedia.org/wiki/Top-level_domain) used by the Mastodon [Fediverse](https://en.wikipedia.org/wiki/Fediverse).

library(tidyverse)

library(httr)

library(jsonlite)

library(scales)

library(ggthemes)

library(ggrepel)

# data source

url <- "https://instances.mastodon.xyz/"

mastodon <- GET(paste0(url, "instances.json")) %>%

content(as = "text") %>%

fromJSON() %>%

select(-info) %>%

filter(!str\_detect(name, "((25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)\\.){3}(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)")) %>% # remove IP

mutate(statuses = as.integer(statuses),

name\_clean = str\_remove(str\_to\_lower(name), "/$|\\.$|:\\d\*$"), # remove trailing dots, slashes and port number

tld = str\_replace\_all(name\_clean, "(.\*?)(\\.[a-z0-9]\*)$", "\\2")) %>% # extract TLD

filter(! tld %in% c("0")) # remove special cases

download\_time <- format(Sys.time(), tz = "UTC", usetz = TRUE)

# saveRDS(mastodon, paste0("data/mastodon\_", download\_time, ".rds"))

nbi <- nrow(mastodon)

nbu <- sum(mastodon$users, na.rm = TRUE)

# cleaning and

# plot the TLDs (top level domains) of Mastondon instances -----------------------

mastodon %>%

filter(! str\_detect(tld, "xn--")) %>%

group\_by(tld) %>%

summarise(nb = n(),

users = sum(users, na.rm = TRUE),

statuses = sum(statuses, na.rm = TRUE)) %>%

filter(nb > 0 & users > 0 & statuses > 0) %>% {

ggplot(., aes(users, statuses, label = tld, size = nb, color = nb)) +

geom\_text\_repel(segment.size = 0, force = 0.5) +

#geom\_point(alpha = 0.4) +

labs(title = "Mastodon Top Level Domains",

subtitle = paste(nrow(.), "TLDs for", nbi, "instances having", nbu, "users -", download\_time),

x = "users",

y = "statuses",

caption = paste("r.iresmi.net\ndata from", url, "\nIDN removed ; positions adapted for clarity")) +

scale\_x\_log10(labels = comma) +

scale\_y\_log10(labels = comma) +

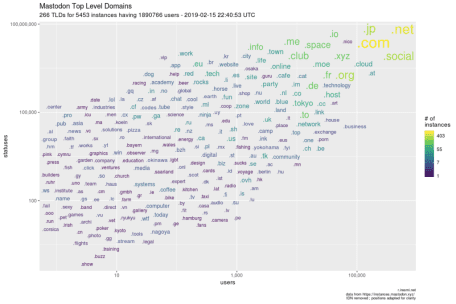
scale\_color\_viridis\_c(trans = "log", name = "# of\ninstances", labels = function(x) round(x, 0)) +

scale\_size(range = c(3, 10), guide = FALSE) +

theme(plot.caption = element\_text(size = 7)) }

(plot\_file <- paste0("img/mastodon\_tld\_", download\_time, ".png")) %>%

ggsave(width = 15, height = 10, units = "cm", dpi = 100, scale = 2)

[](https://i2.wp.com/r.iresmi.net/wp-content/uploads/2019/02/mastodon_tld_2019-02-15-224053-UTC-1.png)

Before posting we have to create an authorization token once.

# Registration

# run this part once and write down client\_id and client\_secret,

# you can then comment this part

r <- POST(paste0(instance , "api/v1/apps"),

body = list(client\_name = "my\_application\_name",

redirect\_uris = "urn:ietf:wg:oauth:2.0:oob",

scopes = "write"))

stop\_for\_status(r)

apps <- content(r)

paste("client\_id :", apps[["client\_id"]])

paste("client\_secret", apps[["client\_secret"]])

# end of registration ; set your client id/secret below

Login

# Your instance, login and password

instance <- "https://mastodon.cloud/"

user <- "\*\*\*\*\*\*\*"

pass <- "\*\*\*\*\*\*\*"

client\_id <- "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"

client\_secret <- "\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"

# Login -------------------------------------------------------------------

r <- POST(paste0(instance , "oauth/token"),

body = list(client\_id = client\_id,

client\_secret = client\_secret,

grant\_type = "password",

username = user,

password = pass,

scope = "write"))

stop\_for\_status(r)

token <- content(r)

We can then post the created image and its accompanying status.

# post image

r <- POST(paste0(instance , "api/v1/media"),

add\_headers(Authorization = paste("Bearer", token[["access\_token"]])),

body = list(file = upload\_file(plot\_file)))

stop\_for\_status(r)

media <- content(r)

# post status

r <- POST(paste0(instance , "/api/v1/statuses"),

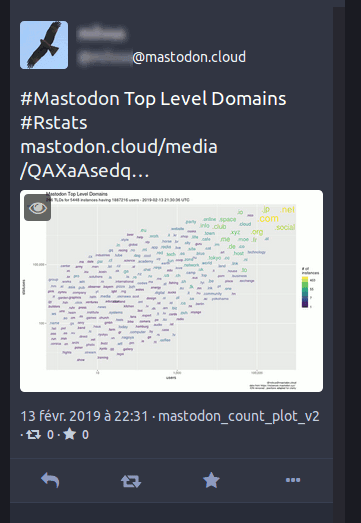
add\_headers(Authorization = paste("Bearer", token[["access\_token"]])),

body = list(status = paste0("#Mastodon Top Level Domains\n#Rstats\n", media[["text\_url"]]),

"media\_ids[]" = media[["id"]]))

stop\_for\_status(r)

statuses <- content(r)

[](https://i1.wp.com/r.iresmi.net/wp-content/uploads/2019/02/mastodon.png)