

# Accessing Twitter Data

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- 1 **Introduction**
- 2 **Make Account**
- 3 **Create Application**
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# Introduction

# Me + Twitter + Research

## Geolocated tweets to understand protests

- Streaming API for tweets in real time, multiple connections (apps) for multiple tasks.
- REST API for follower, friend relationships.
- REST API for tweet history.

# !(Me + Twitter + Research)

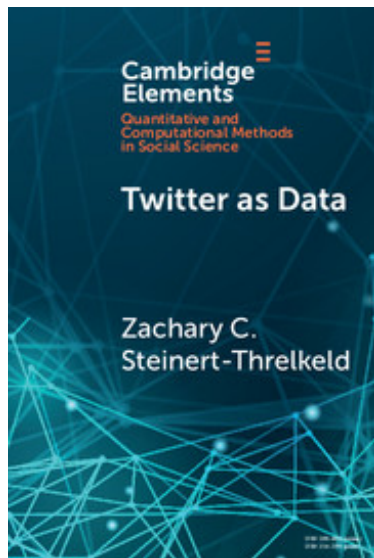
- Search API
- Experiments (bots)

# !(Me + Twitter + Research)

- Search API
- Experiments (bots)

*As of July 2020, **Twitter is deploying a major update, v2, of its API.**  
This course assumes v1, which is still the standard.*

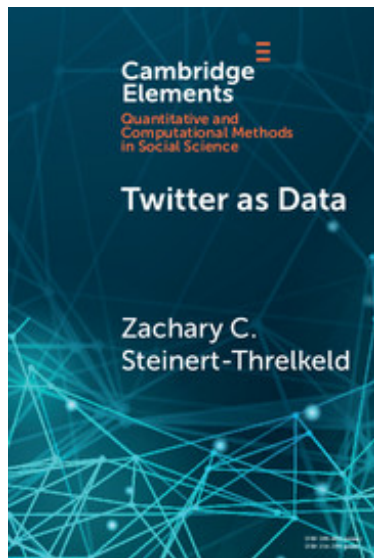
# Self-Promotion



## *Twitter as Data*

- 2018, largely developed 2014-2016.
- R + Python.

# Self-Promotion



## *Twitter as Data*

- 2018, largely developed 2014-2016.
- R + Python.
- Old: idiosyncratic technical features (rate limits, API endpoints), application creation was simpler.
- Today: Updated app creation; rtweet.



# Pacing

If you want or need to create a Twitter developer account, please try to follow the steps as I present them. - Do not hesitate to ask a question or ask me to slow down.

If you are not able to create an app in time for the next class, do not worry.

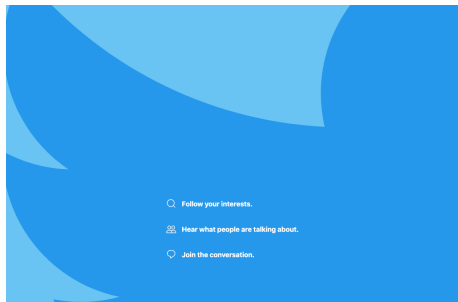
# Pacing

If you want or need to create a Twitter developer account, please try to follow the steps as I present them. - Do not hesitate to ask a question or ask me to slow down.

If you are not able to create an app in time for the next class, do not worry. - I expect you will not get the application for a developer account. - `rtweet` lets you authenticate as a user, meaning you can work on your own Twitter code in the next lecture.

**Make Account**

# Website



-  Follow your interests.
-  Hear what people are talking about.
-  Join the conversation.

Phone, email, or username ZacharyST	Password ***** <a href="#">Forgot password?</a>	<a href="#">Log In</a>
--	---	------------------------



See what's happening in  
the world right now

Join Twitter today.

[Sign up](#)[Log In](#)

# Create Account

[Next](#)

## Create your account

Name

EventData

9/50

Email

zstei.nert@gmail.com

[Use phone instead](#)

### Date of birth

This will not be shown publicly. Confirm your own age, even if this account is for a business, a pet, or something else.

Month

September



Day

11



Year

1977



# Create Account

[Home](#)[# Explore](#)[Notifications](#)[Messages](#)[Bookmarks](#)[Lists](#)[Profile](#)[More](#)[Tweet](#)**Home**

What's happening?

[Tweet](#)**kuz** @kylekuzma · 1h

While we're demanding change, right now in CA Dems are REFUSING to pass modest police reform that would keep abusive officers out of the state and end qualified immunity! @AssemblyDems are you going to make real change or just pretend like you hear us?? #PassSB731

63

429

2K

**Damian Lillard** @Dame\_Lillard · 16h

Thanks bro

**Jared Dudley** @JaredDudley619 · Aug 29

Nothing but respect to @Dame\_Lillard @CJMcCollum and the Rest of the Portland Trail Blazers! Helluva season coming from behind to make the playoffs! One of the best back courts in the NBA! 🙌

52

164

6.5K

**kuz** @kylekuzma · 14h

He was #trolled, #bullied, and called names on the internet for losing weight, when in fact, he was dying. Never ridicule a pain you have never encountered. People are silently fighting battles that you don't know of. If you can't help them, or even pray for them, don't call them names.

♥ Rest in power, #Chadwick. #BlackPanther ♥



111

6.9K

38.8K

**chrissy teigen** @chrissyteigen · 20h

Woke up too early. The day doesn't need to be this long.

**What's happening**

NFL · 1 hour ago

**Jacksonville Jaguars waive RB Leonard Fournette**Trending with: [Minshev](#)

Gaming · Trending

#Madden21 🎮

18.3K Tweets

News · August 28, 2020

**Firefight continue to increase containment of California wildfires**

Music · Trending

hyung

201K Tweets

[Show more](#)**Who to follow****Donovan Mitchell** ✓

@spidamitchell

[Follow](#)**Donald J. Trump** ✓

@realDonaldTrump

[Follow](#)**Jaylen Brown** ✓

@FCHWPO

[Follow](#)[Show more](#)[Terms](#) [Privacy policy](#) [Cookies](#) [Ads info](#) [More](#) ✓

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# Developer Screen

developer.twitter.com

The screenshot shows the Twitter Developer website. At the top, there's a navigation bar with the Twitter logo, the word "Developer", and links for "Use cases", "Solutions", "Products", "Docs", and "Community". On the right, there are links for "Updates", "Support", "Apply", and a search icon. Below the navigation bar, the main heading reads "Tap into what's happening." followed by the subtext "Publish and analyze Tweets, optimize ads, and create unique customer experiences." At the bottom of the main section, there's a link "Introducing Early Access to the next generation of the Twitter API." and a button "Learn about v2".

## Start with a use case

### Listen & analyze

Learn from public conversation to inform decisions.

[Learn more >](#)

### Advertise

Programmatically create and manage Twitter ad campaigns.

[Learn more >](#)

### Publish & curate

Tell great stories with Twitter content.

[Learn more >](#)

### Engage

Create connections with conversational experiences.

[Learn more >](#)

# Apply for Developer Account

First time ever, apply for developer account.

Get started with [Twitter APIs and tools](#)

## Apply for access

All new developers must apply for a developer account to access Twitter APIs. Once approved, you can begin to use our standard APIs and our new premium APIs.

[Apply for a developer account](#)

[Restricted used cases >](#)

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### New premium APIs.

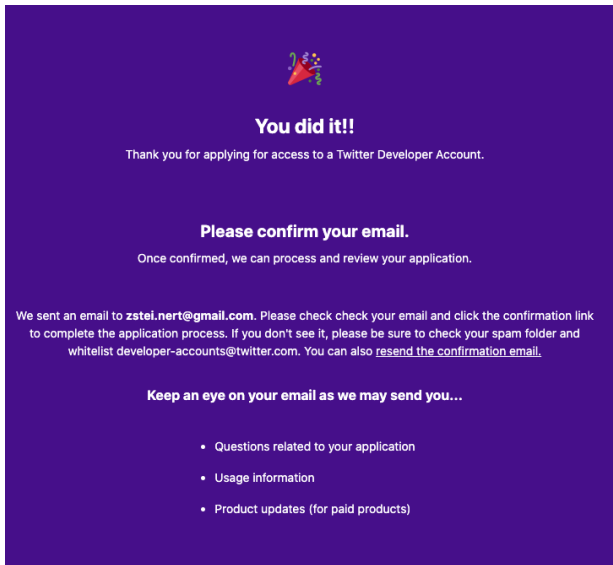
Our new premium APIs bring the reliability, stability, and access of our enterprise APIs to our broader developer ecosystem for the first time. The first premium offerings include the Search Tweets API, which includes a 30-day endpoint and a full-archive endpoint, as well as the premium Account Activity API. Learn more in the [blog post](#) and [apply for a developer account](#) to get started.

[Apply for a developer account >](#)



# Apply for Developer Account

After many questions, you will see this screen.



Approval for a developer account takes a stochastic amount of days

# Tips

- I prefer to have one account per e-mail address, separate browsers too if possible.

# Tips

- I prefer to have one account per e-mail address, separate browsers too if possible. But with @gmail, add . within address and Google ignores the period but Twitter does not.
- If developer-only account, use semi-regularly to not look like a bot.

## Create Application

# Apply

<https://developer.twitter.com/en/apps/>

Apps

Create an app



Covid\_NZ\_AU

App ID  
17888182

Details



Covid\_Chinese

App ID  
17888210

Details



Covid\_India

App ID  
17914082

Details



# Apply

I prefer my account's Twitter homepage for the website URL.

## App details

The following app details will be visible to app users and are required to generate the API keys needed to authenticate Twitter developer products.

### App name (required) ⓘ

Maximum characters: 32

### Application description (required)

Share a description of your app. This description will be visible to users so this is a good place to tell them what your app does.

This application will be used to follow keywords related to wildfires, with a focus on the American West.

Between 10 and 200 characters

### Website URL (required) ⓘ

Allow this application to be used to sign in with Twitter [Learn more](#)

☐ Enable Sign in with Twitter

# Apply

You *must* use this callback URL for rtweet.

NB: rtweet is the first time I have seen someone require the Callback URL. No apps I have created otherwise have it, and they

## Callback URLs <sup>①</sup>

OAuth 1.0a applications should specify their `oauth_callback` URL on the request token step, which must match the URLs provided here. To restrict your application from using callbacks, leave these blank.



[+ Add another](#)

## Terms of Service URL <sup>①</sup>

## Privacy policy URL <sup>①</sup>

## Organization name <sup>①</sup>

## Organization website URL

## Tell us how this app will be used (required)

This field is only visible to Twitter employees. Help us understand how your app will be used. What will it enable you and your customers to do?

I am an academic trying to understand the extent of wildfires in California. I will connect to the free streaming endpoint to follow certain keywords, locations, and users such as @CAFireScanner and @wildfiretoday.

# Apply

The application is now available for use.







# Apply

The application is now available for use. *I am surprised it happened instantaneously.*

Open dropdown menu

Create an app

	Covid_NZ_AU	App ID 17888182	<a href="#">Details</a> ⋮
	Covid_Chinese	App ID 17888210	<a href="#">Details</a> ⋮
	Covid_India	App ID 17914082	<a href="#">Details</a> ⋮
	Tracking_Wildfires	App ID 18683426	<a href="#">Details</a> ⋮

Delete

**Generate Token**

# Overview

To use Twitter's API, you must create a token for the application. The token is a trusted certificate that you will later present to Twitter each time you connect to an API endpoint.

Two authentication methods.





- 1 Browser based from R
- 2 *Access token & access token secret*

I prefer #2, and it is what I show today. Both enable the same functionality, but #2 does not require an interactive session, which is important once you want to set up a persistent data collection pipeline.

# Navigate to App

Open dropdown menu

Create an app

	Covid_NZ_AU	App ID 17888182	<a href="#">Details</a> ⋮
	Covid_Chinese	App ID 17888210	<a href="#">Details</a> ⋮
	Covid_India	App ID 17914082	<a href="#">Details</a> ⋮
	Tracking_Wildfires	App ID 18683426	<a href="#">Details</a> ⋮

Delete

# Note Consumer API Keys

Apps > [Tracking\\_Wildfires](#)

App details

**Keys and tokens**

Permissions

## Keys and tokens

Keys, secret keys and access tokens management.

### Consumer API keys

Regenerate

API key: cv0c4OkCkUcfw6EdIvIX9B2ay

API secret key: EW7um8Ag4SD6KGfmuQEwqcv2OJltNcwHJJWJYtKK7ISWzFJ84q

### Access token & access token secret

Generate

*This is where you can create a token to auth into your Twitter account.*

# Note Consumer API Keys

```
api_key <- 'CkUcfEdIv1X9c40kBwcv062ay'  
api_key_secret <- '1S8AuQKK7g4SD6KWzFJ84qEW7Ewqcv20JIt  
NcwHJJWJYtumGfm'
```

# Generate Access Token

Access token & access token secret

RevokeRegenerate

Please save your tokens

×

We only show your access token and secret once in order to make your account more secure. You can revoke or regenerate your access token and secret at any time.

You should copy and save the values below since you won't be able to access them again here.

Access token :

125306

6gO9Afw9m

Copy

Access token secret :

De3QC

c5xREB

Copy

Close

# Use Keys and Token String

```
api_key <- 'CkUcfEdIv1X9c40kBwcv062ay'  
api_key_secret <- '1S8AuQKK7g4SD6KWzFJ84qEW7Ewqcv20JI  
tNcwHJJWJYtumGfm'  
access_token <- '2K5LMiEwu2YXLK2389nslaqZoQA4Xc2uyI955  
1451ZyIwaEmA94'  
access_token_secret <- 'e5byw45zx7xc5d5EIPnEN1fasdf1mt  
9vpi1fiFlZQpfbk2x62-w2kxKg'
```



# Create Token

```
## install rtweet from CRAN
#install.packages("rtweet")

# load rtweet package
library(rtweet)

wildfire <- create_token(
  app = "Tracking_Wildfires",
  consumer_key = api_key,
  consumer_secret = api_secret_key,
  access_token = access_token,
  access_secret = access_token_secret
)
```

wildfire is now the object containing the token, and rtweet has stored it as an environment variable. Future sessions will automatically load it.

# Tips

- Twitter is nice to academic research, so be honest.
- Application approval process is opaque and often slow.

# Tips

- Twitter is nice to academic research, so be honest.
- Application approval process is opaque and often slow. Perhaps a current favoring of COVID-19 research.
- Do not have apps duplicate work “or substantially similar or overlapping use cases”.

# Tips

- You may eventually have many apps and therefore many keys. Keep a document that tracks them. Do not share this document.

# My Key Tracking

Date Checked	APP_KEY, APP_SECRET	OAuth_TOKEN, OAuth_TOKEN_SECRET	PURPOSE	IN USE?	AWS INSTANCE	Twitter App	Tested?	Works?	NOTES
04.24.2020	E11Hxw0ISuKaG8P1B1uAA 7hzM4drG1TxdjKOUS5dswQBQjgC9INQZ5Ndbw4Y	17367248-nHgCGbMv7G0c5QCYNK1gpP4600zgvX7WVQ2M AuoNHTD7LPhm2EgpaRvYQDzD6DaRw0LSFuc	Testing for HNG	N	N/A	Geocode_S1 room1; 47567711	Y	N	Used in Python script; revoked
04.24.2020	ZHuJgewXYYdXAd3HWcW ZfBh7KQVGfG6oK7uesCOIEZQSD6PIAgWBETEkg9ww		"Troubleshooting"	N	N/A	Geocode_S1 room2; 4989427	N	N	Revoked
04.24.2020	7icj788aenOZgwz7eVQweI94O SckTt9dbGKbnX0bGvmKcc34q7QQCfIebqH5YtgrA7JQTT0		An early grab of GPS tweets	N	N/A	HNG_AWS; 5502934	N	N	Revoked

# App vs. User Auth

- You will notice, especially when checking rate limits, a distinction between user and app authentication.
- User authentication is for when a user gives your app permission to perform certain functions for it, and these functions have higher rate limits. [See the process here.](#)
- Since my research, and creating event data more broadly, does not involve users of an application, I always use app authorization only.

# If Time

If we have reached this slide and time remains in the class, I will create a new application from scratch.