



# **BC COMS 2710:** **Computational Text Analysis**

BARNARD COLLEGE OF COLUMBIA UNIVERSITY

## **Lecture 14 – Data Collection API's - Reddit**

# Announcements – Assignments



- Readings 04:
  - link posted to course site later today
  - due Sunday
  
- HW 02:
  - Due Wednesday night

# Remaining Assignments



- HW03:
  - Scrape CULPA for reviews
  - Identify *words that discriminate categories in textual data:*
    1. <https://wordify.unibocconi.it/index>
    2. Computer PMI
- Tutorial 5.1:
  - Classifying Tweets
- Tutorial 5.2:
  - Amazon Mechanical Turk

# Final Project – Deliverables



- **Project ideation – Friday May 28<sup>st</sup>**
  - <https://www.overleaf.com/read/yzpgxcgsqdvp>
- roughly 250 word overview of what you are interested in

# Final Project – Deliverables



- Project ideation – Friday May 28<sup>st</sup>
  - 5 points
- Project proposal – Friday June 4<sup>th</sup>
  - 9 points
- Project presentations – Monday June 14<sup>th</sup>
  - 6 points
- Project submissions – Friday June 18<sup>th</sup>
  - 15 points
- [http://coms2710.barnard.edu/final\\_project](http://coms2710.barnard.edu/final_project)



# Application Programming Interface



Generally: set of protocols that specify how software programs communicate with each other

Programmatically extract and interact with data

Released by companies for data sharing purposes



# Reddit: the front page of the internet

Slides from Alan Ritter

# Reddit History



- Co-founded by Steve Huffman, Alexis Ohanian & Aaron Schwartz
- Launched 2005
- Sold to Conde Nast in 2006 for 8 digits (10 – 20M)



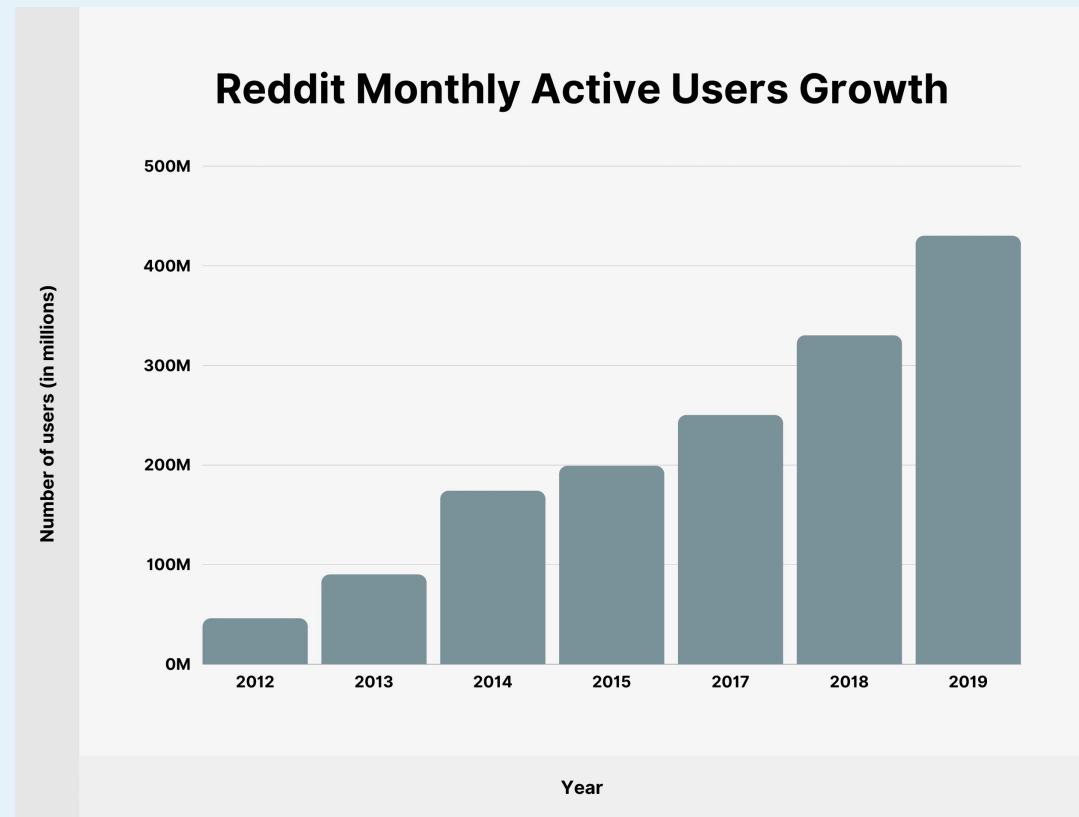
A screenshot of a Twitter post from the account @alexisohanian. The post features a profile picture of Alexis Ohanian, a bio with the handle @alexisohanian, and a timestamp of 10:45 AM · Nov 1, 2020 · Twitter Web App. The tweet itself is a block of text: "Halloween is always a surreal holiday for me, because on Halloween 2006, we sold @reddit to Conde Nast... the deal was months in the making and I wish I'd had more advisors around the table giving me more perspective on the sale. I thought I was getting away with something...". Below the tweet are engagement metrics: 91 Retweets, 25 Quote Tweets, and 1,135 Likes.

Twitter thread: <https://twitter.com/alexisohanian/status/1322927843421179904>



# Reddit Activity

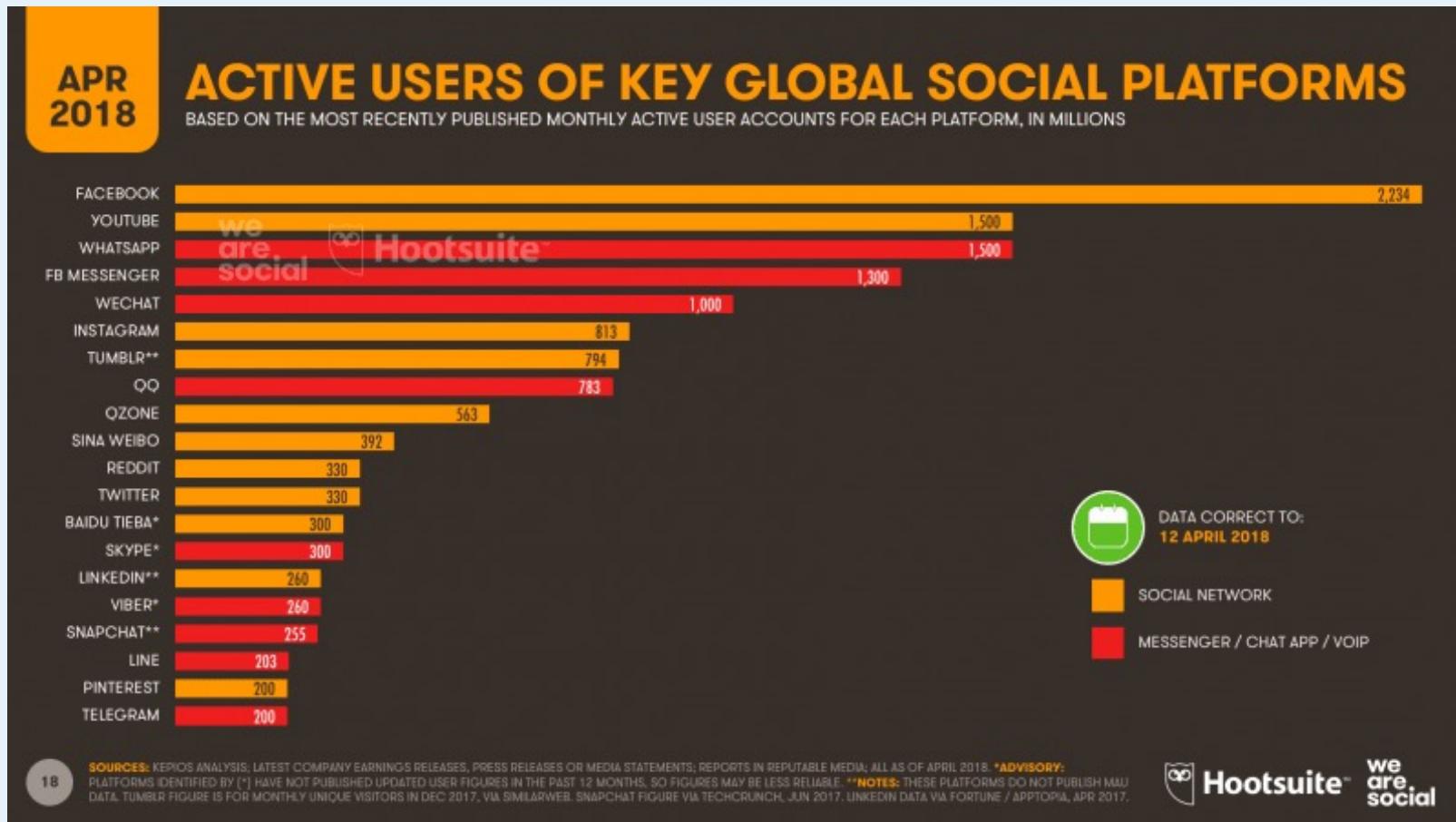
- 430 million monthly active users  
52 million daily active users





# Reddit Activity

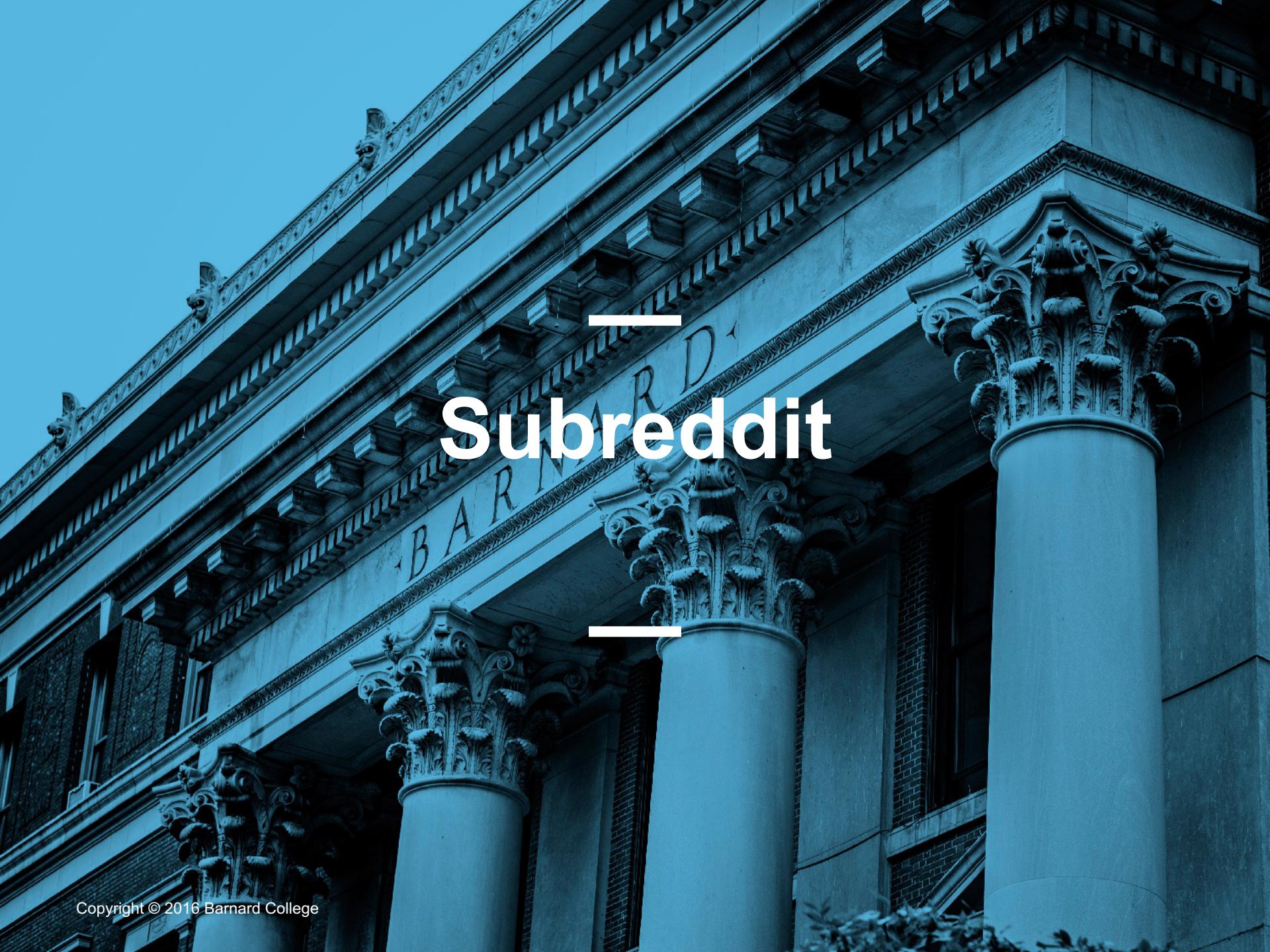
7<sup>th</sup> most popular social media site in the US



# Reddit Activity



- 2020 Stats:
  - 303.4 Million posts
  - 2 Billion comments
- > 100,000 active communities
- > 2.6 Million subreddit
- More 2020 stats:  
<https://redditblog.com/2020/12/08/reddits-2020-year-in-review/>



# Subreddit



# Subreddit

↑ Posted by u/[deleted] 5 years ago ━━  
2

## what is a subreddit?

Resolved

please make it simple and easy to understand either im retarded or stupid because other sites cant explain it to me thanks for answering

4 Comments Share Save Hide Report

75% Upvoted



NumberTwoFan · 5y

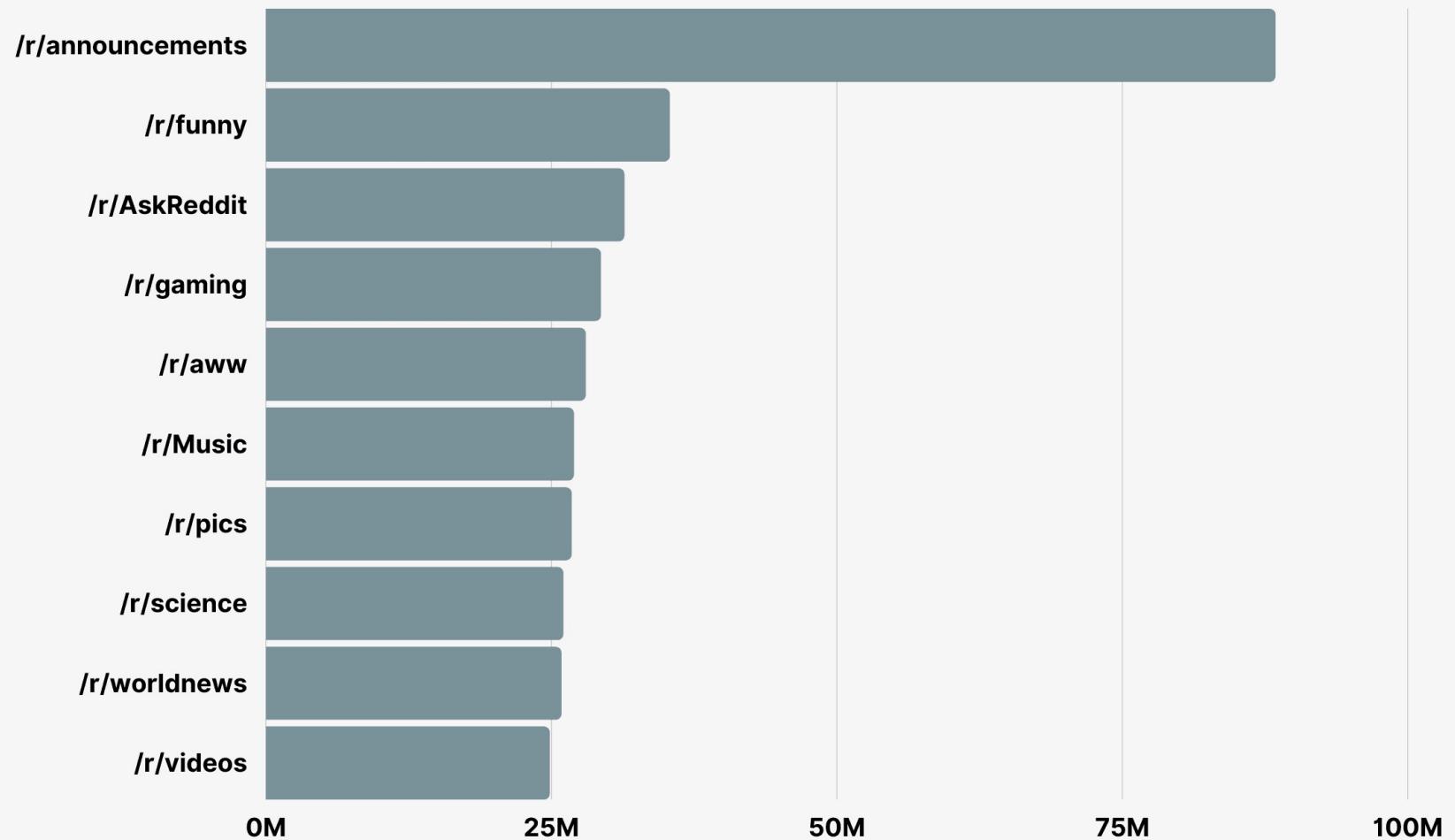
It is a web forum of a particular topic where you can post links or create a self post and dicuss. You can subscribe if you like that topic or you can unsubscribe if you dont.

↑ 4 ↓ Give Award Share Report Save



- Community organized around posts
- Subreddits for basically everything
  - > 100,000 active communities
  - > 2.6 Million subreddit

# What are the most popular subreddits?



Live list: <http://redditlist.com/sfw>

# Finding subreddit statistics



- <https://subredditstats.com/>
- <https://frontpagemetrics.com/r/>
- Question: Why might these stats be helpful



—

# Research based on Reddit data

—

# Research Venues



International Conference on Web & Social Media  
(IWCSM) - <https://www.icwsm.org/>

The Web Conference (WWW) -  
<https://www2021.thewebconf.org/>

Conference on Computer-Supported Cooperative Work and Social Computing -  
<https://cscw.acm.org/>



**International Conference on Web & Social Media (IWCSM) - <https://www.icwsm.org/>**

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<https://www2021.thewebconf.org/>

**Conference on Computer-Supported Cooperative Work and Social Computing -**  
<https://cscw.acm.org/>

# **Examining Peer-to-Peer and Patient-Provider Interactions on a Social Media Community Facilitating Ask the Doctor Services**



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1. What are the self-reported demographics of posters on r/AskDocs?
2. What health topics are asked about on r/AskDocs, how does this vary across demographics?
3. Does receipt of a response vary across demographics?
4. Does the empathy of responses vary across demographics or health topics?

<https://ojs.aaai.org/index.php/ICWSM/article/view/7315/7169>



# ASK A DOCTOR



## Medical Questions

r/AskDocs

Join



Create Post

Hot

New

Top

...



PINNED BY MODERATORS



Posted by u/AutoModerator 1 day ago

### Weekly Discussion/General Questions Thread - May 24, 2021

38 Comments

Award

Share

Save

...



Posted by u/googooahaha Layperson/not verified as healthcare professional 3 hours ago



### I vomit everytime I sneeze

29F, 5'7, 200 lbs, 115 mg methadone for seven years now, had high blood pressure since 13 but stopped taking medication for it 10 years ago and have had normal blood

## About Community

...

Having a medical issue? Ask a doctor or medical professional on Reddit! All flaired medical professionals on this subreddit are verified by the mods.

307k

Members

1.3k

Online

Created Jul 10, 2013

Create Post

COMMUNITY OPTIONS

# Examining Peer-to-Peer and Patient-Provider Interactions on a Social Media Community Facilitating Ask the Doctor Services



How do they discover demographics?

- Regular Expressions

How do they discover topics?

- LDA

How do they measure empathy?

- Modification of LIWC

Category	Examples
Personal pronouns	<i>I, his, their</i>
Impersonal pronouns	<i>it, that, anything</i>
Articles	<i>a, an, the</i>
Conjunctions	<i>and, but, because</i>
Prepositions	<i>in, under, about</i>
Auxiliary verbs	<i>shall, be, was</i>
High-frequency adverbs	<i>very, rather, just</i>
Negations	<i>no, not, never</i>
Quantifiers	<i>much, few, lots</i>

Table 2: Functional word categories for LSM as defined by LIWC 2015 (Pennebaker et al. 2015)



## About Community

...

A subreddit of curated academic articles, pre-prints, books and conference papers on Reddit. With grey literature allowed on a case-by-case basis if relevant. Covering works which study Reddit or use the site as a proxy to investigate other social phenomena.

116

Members

2

Online



# Reddit API and Pushshift

# The Pushshift Reddit Dataset

**Jason Baumgartner<sup>1,\*</sup>, Savvas Zannettou<sup>2,✉</sup>, Brian Keegan<sup>3</sup>, Megan Squire<sup>4</sup>, Jeremy Blackburn<sup>5,✉</sup>**

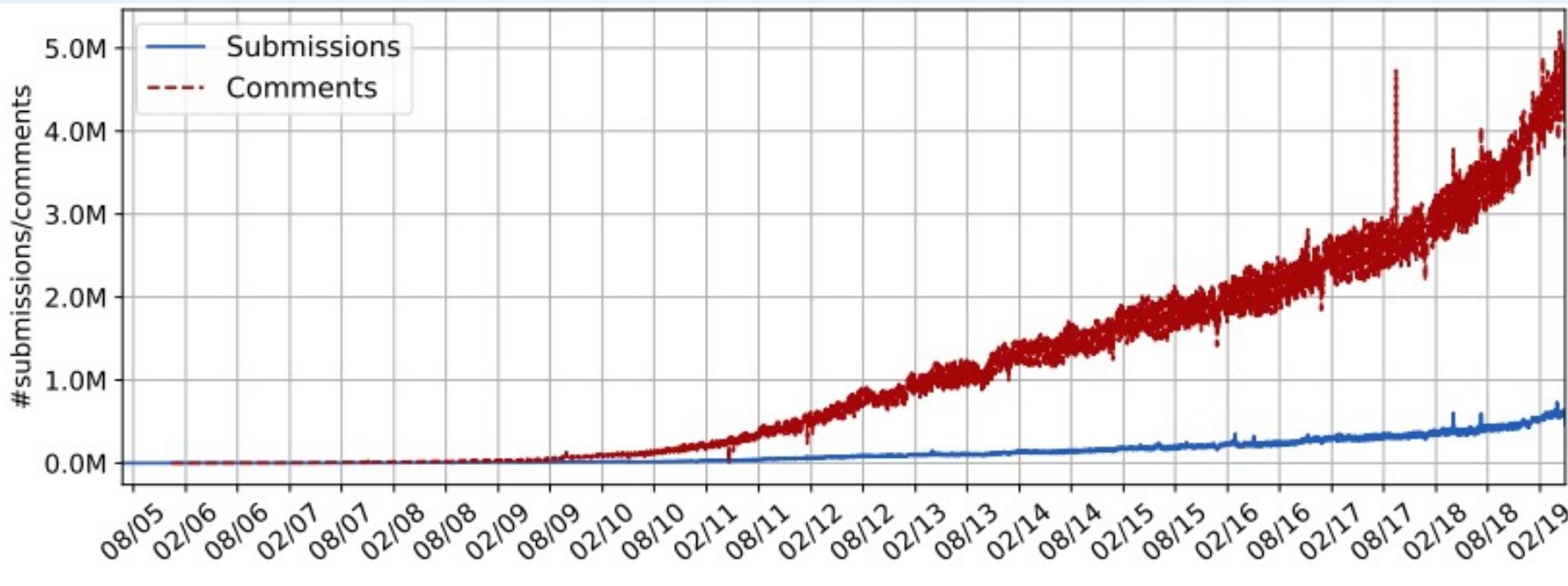
<sup>1</sup>Pushshift.io, <sup>2</sup>Max Plank Institute, <sup>3</sup> University of Colorado Boulder, <sup>4</sup>Elon University, <sup>5</sup>Binghamton University

\*Network Contagion Research Institute, <sup>✉</sup>iDrama Lab

jason@pushshift.io, szannett@mpi-inf.mpg.de, brian.keegan@colorado.edu, msquire@elon.edu, blackburn@cs.binghamton.edu

*Social media data has become crucial to the advancement of scientific understanding ... collecting large-scale social media data involves a high degree of engineering skill set and computational resources ... research is often times gated by data engineering problems that must be overcome before analysis can proceed*

# Pushshift data



Reddit data on Pushshift:  
<https://files.pushshift.io/reddit/>

# Submissions & Comments



- Submission:
  - A post on a subreddit

# Posts on a subreddit

The screenshot shows a subreddit page for r/learnpython. At the top, there's a search bar and a navigation bar with options like 'Comments', 'Award', 'Share', and 'Save'. Below the navigation, there are two posts highlighted with red boxes.

**Post 1:** Posted by u/thenovastar17 6 hours ago. Title: **Newbie looking to learn**. Body: Hello! I have been wanting to learn Python for a while but have struggled to find a good website to commit to. I am a beginner in Python but have experience with other coding languages (Java, HTML, Ruby, etc.). What would you all recommend would be a good place to learn the basics + create projects? I have tried DataCamp, but it wouldn't let me continue with my course until I got the full access.

**Post 2:** Posted by u/Blitzkrieg 19 hours ago. Title: **How much do you worry about optimization?**. Body: I write code almost exclusively to help myself with work tasks (large file manipulation, organizing files, spreadsheet analysis, etc...). I'm a very rank coder who mostly specializes in copy and pasting. I recently wrote some code to help with a process that I previously did in Excel. The Excel version took 6 minutes and the Python/Pandas version takes less than 2. However, I'm sure there are some major holes in my logic and I'm sure hope optimizations could be made to get it quicker. But I only need it twice a day and it's already significantly faster than my last version.

Below each post, there are standard Reddit-style controls for upvoting, downvoting, commenting, awarding, sharing, saving, and more.

# Submissions & Comments



- Submission:
  - A post on a subreddit
  
- Comments:
  - Replies to a submission

# Threaded Comments



BlackRussianJedi · 5h  
Voted ✓

While I don't entirely agree, thank you so much for this very well-reasoned breakdown. I don't entirely disagree either. I hold both, but did from the beginning. Perhaps I misunderstand the shittadel and friends situation, but it seems like having a lot of people hold both puts a lot more strain on the shfs.

I also feel that at this point, there's virtually nothing that can impede the GME squeeze from going to infinity. Not paperhands, not the other stock, nothing. If we trust the DD, the paperhands (if there are still any left) won't impact the price even if they sell. We own the float many times over, if I understand correctly.

I agree with your other points. Thank you for the breakdown in value. I think the other stock feels more accessible for people, it certainly did for me, but you're absolutely right... looking at the numbers, A single GME share likely goes higher than 100 of the other one. But I think early on, people like me weren't confident about either stock actually mooning, because it looked like the squeeze was killed in January, and there really wasn't much meaningful DD back then compared to now. If I was afraid of losing money at first, and wasn't sure about a squeeze for either, the lower barrier of entry would be much more attractive. Now that there is plenty of DD, in my opinion, the logical play is GME. I've been holding a boatload of the other since Feb, and a modest amount of GME since Jan, but all of my money recently has gone into GME. Thanks again for the breakdown. This is not financial advice, no one should listen to anything I say, I am a total amateur.

↑ 12 ↓ Reply Give Award Share Report Save

Kuzuryu1 · 5h  
Voted ✓

Good points, the fact that they need to fight on multiple fronts is a good one, however we do not know how much money it actually costs them to suppress the prices, for all we know it might actually be really cheap especially the non-existent interest rates. So while it may be a good point we do not know if it actually hurts them that much to fight 2 sides.

The other point being that we hold the float, yes the definitely do, however what TRULY matters is, does diamond hands hold the float, you can hold 10000% of the float, if everyone sells at 1000, then the squeeze is over. All that matters is for minimum 100% of the float to be held by people who refuse to sell until millions.

↑ 9 ↓ Reply Give Award Share Report Save

BlackRussianJedi · 4h  
Voted ✓

True that. But for some reason, I feel super confident that most GME holders are diamond handed maniacal apes. I personally know that I will hold a decent amount of my shares indefinitely. Hell, selling 1 or maybe 2 on the way down will be more than enough for me. I will hold onto the rest out of spite. I think many others feel this way too, but to your point, I guess there's really no way to know. But I believe the majority will hold. Cheers buddy

↑ 4 ↓ Reply Give Award Share Report Save

Kuzuryu1 · 3h  
Voted ✓

You're very optimistic, that's good, however as you've probably seen, I'm more on the pessimistic side, right now people are holding with a diamond grip on their shares because they have nothing to lose and haven't gained anything yet, however once the price rises, and people suddenly have something to lose, many will paperhand at the smallest loss because they never had any control over their emotions and won't ever have any. Then the sudden wave of regret when they sell and the price rises right back up, trust me many will invest in \$rope after being unable to cope with their regrets.

↑ 3 ↓ Reply Give Award Share Report Save

Mundane-Answer · 5h  
Voted ✓

I've generally been pretty lukewarm on AMC, but have actually bought in a few recently as an anti-panic measure. Because I will be a complete mess during MOASS and need to take measures to mitigate my anxiety.

AMC is cheap (I only deal in whole GME and I'm not a wealthy ape) and with the level of control and manipulation the hedgefunds have here, I would be very surprised if it didn't moon before

# Search parameters



## Submissions

<code>ids</code>	Get specific submissions via their ids	N/A	Comma-delimited base36 ids
<code>q</code>	Search term. Will search ALL possible fields	N/A	String / Quoted String for phrases
<code>q.not</code>	Exclude search term. Will exclude these terms	N/A	String / Quoted String for phrases
<code>title</code>	Searches the title field only	N/A	String / Quoted String for phrases
<code>title.not</code>	Exclude search term from title. Will exclude these terms	N/A	String / Quoted String for phrases
<code>selftext</code>	Searches the selftext field only	N/A	String / Quoted String for phrases
<code>selftext.not</code>	Exclude search term from selftext. Will exclude these terms	N/A	String / Quoted String for phrases
<code>size</code>	Number of results to return	25	Integer <= 500
<code>fields</code>	One return specific fields (comma delimited)	All Fields	String or comma-delimited string (Multiple values allowed)
<code>sort</code>	Sort results in a specific order	"desc"	"asc", "desc"
<code>sort_type</code>	Sort by a specific attribute	"created_utc"	"score", "num_comments", "created_utc"
<code>aggs</code>	Return aggregation summary	N/A	["author", "link_id", "created_utc", "subreddit"]
<code>author</code>	Restrict to a specific author	N/A	String or comma-delimited string (Multiple values allowed)
<code>subreddit</code>	Restrict to a specific subreddit	N/A	String or comma-delimited string (Multiple values allowed)
<code>after</code>	Return results after this date	N/A	Epoch value or Integer + "s,m,h,d" (i.e. 30d for 30 days)
<code>before</code>	Return results before this date	N/A	Epoch value or Integer + "s,m,h,d" (i.e. 30d for 30 days)
<code>score</code>	Restrict results based on score	N/A	Integer or > x or < x (i.e. score>100 or score<-25)
<code>num_comments</code>	Restrict results based on number of comments	N/A	Integer or > x or < x (i.e. num_comments>100)
<code>over_18</code>	Restrict to nsfw or sfw content	both allowed	"true" or "false"
<code>is_video</code>	Restrict to video content	both allowed	"true" or "false"
<code>locked</code>	Return locked or unlocked threads only	both allowed	"true" or "false"
<code>stickied</code>	Return stickied or unstickied content only	both allowed	"true" or "false"
<code>spoiler</code>	Exclude or include spoilers only	both allowed	"true" or "false"
<code>contest_mode</code>	Exclude or include content mode submissions	both allowed	"true" or "false"
<code>frequency</code>	Used with the aggs parameter when set to created_utc	N/A	"second", "minute", "hour", "day"
<code>metadata</code>	display metadata about the query	false	["true", "false"]

## Comments

Parameter	Description	Default	Accepted Values
<code>q</code>	Search term.	N/A	String / Quoted String for phrases
<code>ids</code>	Get specific comments via their ids	N/A	Comma-delimited base36 ids
<code>size</code>	Number of results to return	25	Integer <= 500
<code>fields</code>	One return specific fields (comma delimited)	All Fields Returned	string or comma-delimited string
<code>sort</code>	Sort results in a specific order	"desc"	"asc", "desc"
<code>sort_type</code>	Sort by a specific attribute	"created_utc"	"score", "num_comments", "created_utc"
<code>aggs</code>	Return aggregation summary	N/A	["author", "link_id", "created_utc", "subreddit"]
<code>author</code>	Restrict to a specific author	N/A	String
<code>subreddit</code>	Restrict to a specific subreddit	N/A	String
<code>after</code>	Return results after this date	N/A	Epoch value or Integer + "s,m,h,d" (i.e. 30d for 30 days)
<code>before</code>	Return results before this date	N/A	Epoch value or Integer + "s,m,h,d" (i.e. 30d for 30 days)
<code>frequency</code>	Used with the aggs parameter when set to created_utc	N/A	"second", "minute", "hour", "day"
<code>metadata</code>	display metadata about the query	false	"true", "false"

# Search parameters



## Submissions:

- ids: Get specific submissions via their ids
- q: search term
- title: search the title field
- Selftext: searches text
- subreddit
- Author
- After/before
- Num\_comments

## Comments:

- ids
- q
- Author
- Subreddit
- size

Documentation can be found here:  
<https://github.com/pushshift/api>

A black and white photograph of the exterior of Barnard College. The building features classical architectural details, including large, ornate Corinthian columns supporting a prominent entablature. The word "BARNARD" is inscribed in capital letters along the top edge of the entablature. The sky above is clear and blue.

# What's in a Submission



- author
- title
- Selftext
- Created\_at
- Score
- num\_comments
- Subreddit
- url

# — Whats in a comment



- author
- title.....
- Selftext body
- Created\_at
- Score
- num\_comments
- Subreddit
- url