

Mastodon

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About the Platform:



Mastodon (see: <https://joinmastodon.org/>) is a hybrid between Twitter and Reddit. The app calls itself a “federation” of communities and like most other social media platforms, users can create a profile, post images, messages and videos, and follow other users. (Bhavani, Singaravelu 2019) It was founded on October 5, 2016 by Eugen Rochko who built the platform based on Twitter but made it decentralized instances (which means that instead of one giant server, the platform hosts many different servers that users can join). (Bhavani, Singaravelu 2019) These servers are called “instances” and some are open to anyone to join (mastodon.xyz and mastodon.social) and some are reserved for users with specific interests. The platform claims to have 2.2 million users (Banerjee,

2019). It is not as anonymous as some other social media platforms (such as 4 Chan and Reddit) because you are required to make an account (which requires an email address and password) to view an instance. Each instance has an owner who moderates the instances and lets users join. Unlike other social media platforms that have a phone app that a user can download, Mastodon does not have an official app but users can look for Android, IOS, and SailfishOS compatibility apps. (Bhavani, Singaravelu 2019) Content on Mastodon varies-their services fall under 11 different categories. These categories are general, regional, art, music, journalism, activism, LGBTQ+, gaming, technology, furry, and food. The largest category is general (with 40 instances), the second largest is regional (with 29 instances) and the third largest is technology (with 14). There are server rules and a code of conduct. The rules are: sexually explicit content must be marked as sensitive when posting, no racism, sexism, homophobia, transphobia, xenophobia, or casteism, no incitement of violence or promotion of violent ideologies, no harassment, dogpiling or doxing of other users, and no content illegal in Germany. The full code of conduct can be found at <https://mastodon.social/about/more#:~:text=Server%20rules&text=No%20racism%2C%20sexism%2C%20homophobia%2C,No%20content%20illegal%20in%20Germany> What makes Mastodon different from the other platforms is that it is a collection of different servers.

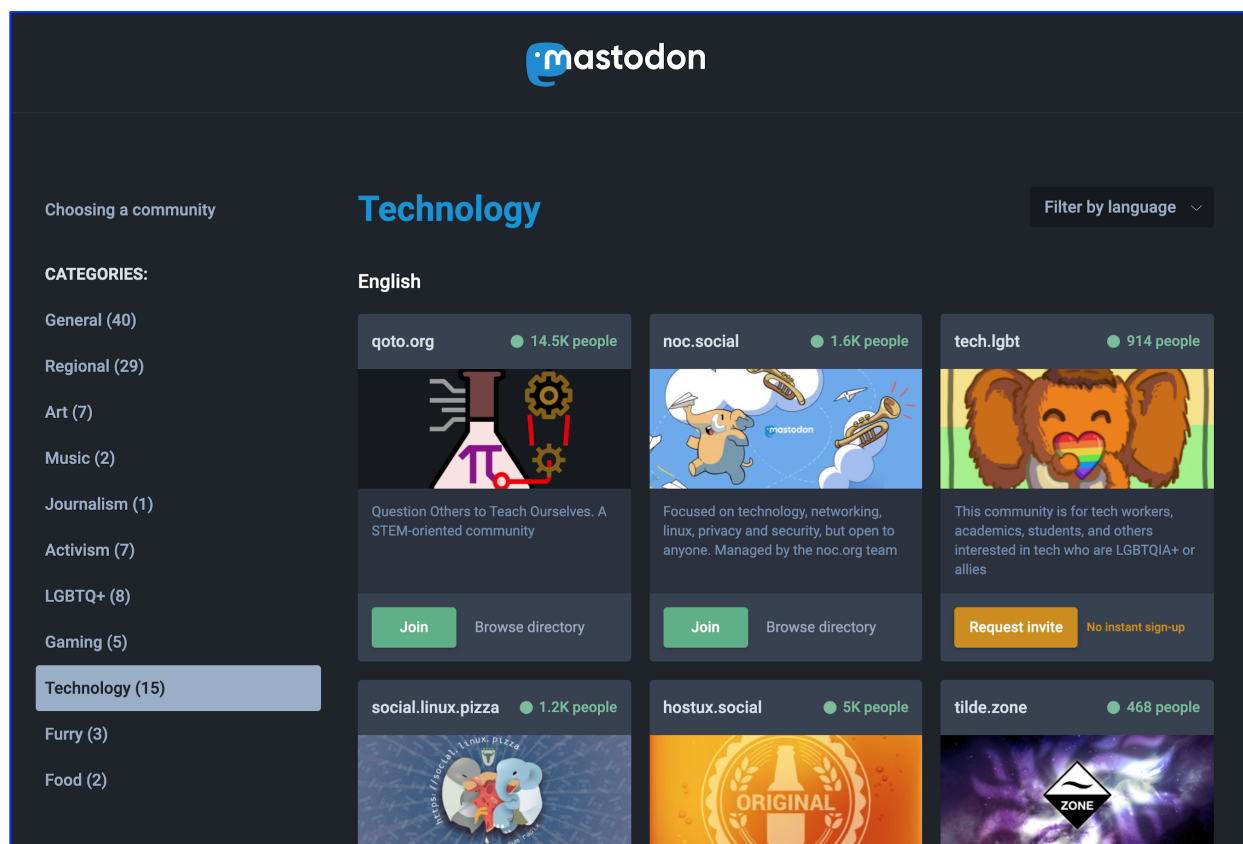


Figure 1. An example of Mastodon's different instances categories. Once you click on a category, you can see multiple instances to join. Some instances are private so you must request an invite (e.g., the tech.lgbt instance requires this).

2) What data is available from this platform?

Mastodon allows researchers to collect content from the posts, meta-data (geo-location of country, topics) and usage statistics. Researchers are also able to collect “instances” which are defined as, “communications (black links) among the servers” (Zignani, 2018). An example of an instance is depicted in Figure 2. From each instance the researchers were able to collect the domain name, the number of users registered to the instance, the number of connections between the instance and the other ones, the number of posts published by users hosted by the instance, a description of the instance, topics that the instance focuses on, and lastly, the version of the software (Zignani, 2018). There is also a publicly available API, which breaks down the app (oauth), accounts (bookmarks, favourites, mutes, blocks, domain_blocks, filters, reports, follow_requests, endorsements, featured_tags, preferences, suggestions), statuses (media, polls, scheduled_statuses), timelines (conversations, lists, markers, streaming), notification (push), search, instances (trends, directory, custom_emojis), admin, announcements, proofs, embed).

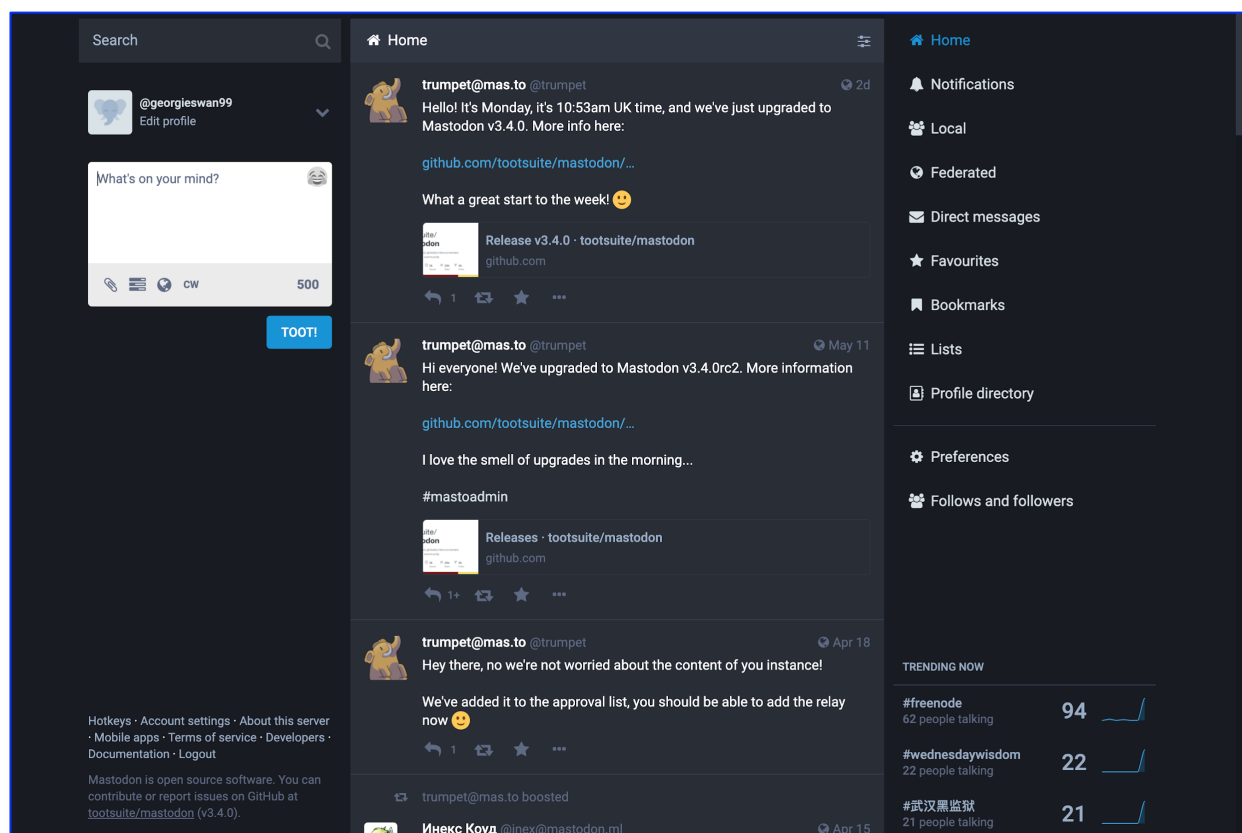


Figure 2. What individual users see when they are on the home page of an instance.

3) What are the restrictions/limitations of the data?

A toot can only be 500 characters long (Wong, 2017). Mastodon's API rate limit is generally 300 requests per 5 minutes (Mastodon.py). Our team used the timeline API endpoint which either did not have a limit (some of the other platform's endpoints did not have a limit) or our team never reached the limit because we never exceeded it.

The privacy settings on Mastodon are unique. Users can either use account locking or post privacy (Brown, 2018). "Locking your account prevents just anyone from following you and viewing your followers-only posts. Keep in mind that your public and followers-only posts are copied to the instances (recall this is also known as communications of your followers; Brown, 2018) For post privacy, users can set it to Followers only or unlisted (everyone can see, but it is not listed on public timelines). However, these privacy settings are recommendations, not demands so potentially researchers could still collect the private or unlisted posts. Their privacy settings are not a part of the original OStatus protocol; thus, researchers must run a recent version of Mastodon to respect privacy concerns (Hart, 2017). Therefore, in our data collection efforts, we chose to run the more recent version of Mastodon, which is 3.3.0 and was released December 27th, 2020. Users can also block followers and other users. Users can filter statuses for specific keywords or phrases and users can apply this filter to home timelines and lists (matching statuses will be removed from your home feed and lists), notifications (matching notifications will not be shown), public timeline (matching statuses will not appear in local/federated timelines), conversations (matching statuses will be hidden in threads and detailed views).

4) What variables (and corresponding meta-data) are available?

The variables that are available include users' usernames, posts, how many people responded to their post and what they said, the date of the post, the number of favorites, notifications, direct messages, your server and other peoples' servers, your followers, other peoples' toots number of followers a user has and who they are and numbers that they follow and who they are. Variables that researchers can collect are posts, meta-data (geo-location of country, topics), usage statistics and instances. From each instance researchers can collect domain name, the number of users registered to the instance, the number of connections between the instance and the other ones, the number of posts published by users hosted by the instance, a description of the instance, topics that the instance focuses on, and lastly, the version of the software (Zignani, 2018). Another variable that is available is the IP address from log in and the browser application.

4a) What information is linked to the post (e.g., timestamps, re-tweets, location, device/platform that content was shared from, number of likes)?

Data Directory

(See: <https://docs.joinmastodon.org/>)

*Note: In general, HTTP codes are as follows: 200 is success, 400 is failure, and 401 is unauthorized.

Apps = “create an application” (<https://docs.joinmastodon.org/methods/apps/>)

Client_name = required, string, “a name for your application”
(<https://docs.joinmastodon.org/methods/apps/>)

Redirect_uris = required, string; “here, the user should be redirected after authorization. To display the authorization code to the user instead of redirecting to a web page, use urn:ietf:wg:oauth:2.0:oob in this parameter.”
(<https://docs.joinmastodon.org/methods/apps/>)

Scopes = optional, string, “space separated list of scopes. If none is provided, defaults to read.” (<https://docs.joinmastodon.org/methods/apps/>)

Website = optional, string, “A URL to the homepage of your app”
(<https://docs.joinmastodon.org/methods/apps/>)

Outh = “authorize a user”(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Force_login = optional, string, “Added in 2.6.0. Forces the user to re-login, which is necessary for authorizing with multiple accounts from the same instance.”
(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Response_type = required, string; “Should be set equal to code.”
(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Client_id = required, string; “Client ID, obtained during app registration.”
(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Redirect_uri = required, string; “Set a URI to redirect the user. If this parameter is set to urn:ietf:wg:oauth:2.0:oob then the authorization code will be shown instead. Must match one of the re-direct URIs declared during app registration.”
(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Scope = optional, string; “List of requested OAuth scopes, separated by spaces (or by pluses, if using query parameters). Must be a subset of scopes declared during app registration. If not provided, defaults to read. Obtain a token, for nonpublic data.”
(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Client_id = required, string, “Client ID, obtained during app registration.”
(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Client_secret = required, string; "Set a URI to redirect the user. If this parameter is set to urn:ietf:wg:oauth:2.0:oob then the token will be shown instead. Must match one of the re-direct URIs declared during app registration."

(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Scope = optional, string; "List of requested OAuth scopes, separated by spaces. Must be a subset of scopes declared during app registration. If not provided, defaults to read." (<https://docs.joinmastodon.org/methods/apps/oauth/>)

Code = optional, string; "A user authorization code, obtained via /oauth/authorize."

(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Grant_type = required, string; "Set equal to authorization_code if code is provided in order to gain user-level access. Otherwise, set equal to client_credentials to obtain app-level access only." (<https://docs.joinmastodon.org/methods/apps/oauth/>)

Revoke token = "Revoke an access token to make it no longer valid for use."

(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Client_id = required, string; "Client ID, obtained during app registration"

(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Client_secret = required, string; "Client secret, obtained during app registration"

(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Token = required, string; "The previously obtained token, to be invalidated."

(<https://docs.joinmastodon.org/methods/apps/oauth/>)

Accounts = Account credentials, Retrieve information, Perform actions on an account, General Account Actions

Register an Account

Authorization = required, string; "Bearer <app token>"

(<https://docs.joinmastodon.org/methods/accounts/>)

Reason = optional, string; "Text that will be reviewed by moderators if registrations require manual approval." (<https://docs.joinmastodon.org/methods/accounts/>)

Username = required, string; "The desired username for the account."

(<https://docs.joinmastodon.org/methods/accounts/>)

Email = required, string; "The email address to be used for login."

(<https://docs.joinmastodon.org/methods/accounts/>)

Password = required, string; "The password to be used for login."

(<https://docs.joinmastodon.org/methods/accounts/>)

Agreement = required, Boolean; "Whether the user agrees to the local rules, terms, and policies. These should be presented to the user in order to allow them to consent before setting this parameter to TRUE." (<https://docs.joinmastodon.org/methods/accounts/>)

Locale = required, string; "The language of the confirmation email that will be sent." (<https://docs.joinmastodon.org/methods/accounts/>)

Verify Account credentials = "Test to make sure that the user token works." (<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; "Bearer <user token>" (<https://docs.joinmastodon.org/methods/accounts/>)

Update account credentials = "Update the user's display and preferences." (<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; "Bearer <user token>" (<https://docs.joinmastodon.org/methods/accounts/>)

Discoverable = optional, string; "Whether the account should be shown in the profile directory." (<https://docs.joinmastodon.org/methods/accounts/>)

Bot = optional, Boolean; "Whether the account has a bot flag." (<https://docs.joinmastodon.org/methods/accounts/>)

Display_name = optional, string; "The display name to use for the profile." (<https://docs.joinmastodon.org/methods/accounts/>)

Note = optional, string; "The account bio." (<https://docs.joinmastodon.org/methods/accounts/>)

Avatar = optional, string; "Avatar image encoded using multipart/form-data." (<https://docs.joinmastodon.org/methods/accounts/>)

Header = optional, string; "Header image encoded using multipart/form-data." (<https://docs.joinmastodon.org/methods/accounts/>)

Locked = optional, Boolean; "Whether manual approval of follow requests is required." (<https://docs.joinmastodon.org/methods/accounts/>)

Source [privacy] = optional, string; "Default post privacy for authored statuses." (<https://docs.joinmastodon.org/methods/accounts/>)

Source [sensitive] = optional, Boolean; "Whether to mark authored statuses as sensitive by default." (<https://docs.joinmastodon.org/methods/accounts/>)

Source [launguge] = optional, string; “Default language to use for authored statuses. (ISO 6391)” (<https://docs.joinmastodon.org/methods/accounts/>)

Fields_attributes = optional, array, “Profile metadata name and value. (By default, max 4 fields and 255 characters per property/value)” (<https://docs.joinmastodon.org/methods/accounts/>)

Account = “View information about a profile.” (<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string; “The id of the account in the database.” (<https://docs.joinmastodon.org/methods/accounts/>)

Statuses = Statuses posted to the given account. (<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string; “The id of the account in the database.” (<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = optional, string; “Bearer <user token>” (<https://docs.joinmastodon.org/methods/accounts/>)

Followers = “Accounts which follow the given account, if network is not hidden by the account owner.” (<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string; “The id of the account in the database.” (<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <app token>” (<https://docs.joinmastodon.org/methods/accounts/>)

Max_id = optional, string

Since_id = optional, string

Limit = optional, number

Following = “Accounts which the given account is following, if network is not hidden by the account owner.” (<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, “The id of the account in the database.” (<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <app token>”

Max_id = optional, string; “**Internal parameter.** Use HTTP Link header for pagination.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Since_id = optional, string; “**Internal parameter.** Use HTTP Link header for pagination.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Limit = optional, string; “Maximum number of results to return. Defaults to 40.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Featured tags = “Tags featured by this account.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Lists containing this account = “User lists that you have added this account to.”
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string; “The id of the account in the database.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string, “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Follow = “Follow the given account. Can also be used to update whether to show reblogs or enable notifications.” (<https://docs.joinmastodon.org/methods/accounts/>)

:id = request, string; “The id of the account in the database.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Reblogs = optional, Boolean; “Receive this account's reblogs in home timeline? Defaults to true.” (<https://docs.joinmastodon.org/methods/accounts/>)

Notify = optional, Boolean; “Receive notifications when this account posts a status? Defaults to false.” (<https://docs.joinmastodon.org/methods/accounts/>)

Unfollow = “Unfollow the given account.”
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, “The id of the account in the database.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Block = “Block the given account. Clients should filter statuses from this account if received (e.g. due to a boost in the Home timeline).”
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, “The id of the account in the database.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Unblock = “Unblock the given account”
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, “The id of the account in the database.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Mute = “Mute the given account. Clients should filter statuses and notifications from this account, if received (e.g. due to a boost in the Home timeline).”
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, “The id of the account in the database.”
Authorization = required, string; “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Notifications = optional, Boolean; “Mute notifications in addition to statuses? Defaults to true.” (<https://docs.joinmastodon.org/methods/accounts/>)

Duration = optional, number; “How long the mute should last, in seconds. Defaults to 0 (indefinite).” (<https://docs.joinmastodon.org/methods/accounts/>)

Unmute = “Unmute the given account.”
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, “The id of the account in the database.”
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; “Bearer <user token>”
(<https://docs.joinmastodon.org/methods/accounts/>)

Feature on profile = “Add the given account to the user’s featured profiles. (Featured profiles are currently shown on the user’s own public profile.)”
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, "The id of the account in the database."
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; "Bearer <user token>"
(<https://docs.joinmastodon.org/methods/accounts/>)

Unfeature on profile = "Remove the given account from the user's featured profiles."
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string, "The id of the account in the database."
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; "Bearer <user token>"
(<https://docs.joinmastodon.org/methods/accounts/>)

User note = "Sets a private note on a user."
(<https://docs.joinmastodon.org/methods/accounts/>)

:id = required, string; "The id of the account in the database."
(<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; "Bearer <user token>"
(<https://docs.joinmastodon.org/methods/accounts/>)

Comment = optional, string; "The comment to be set on that user. Provide an empty string or leave out this parameter to clear the currently set note."
(<https://docs.joinmastodon.org/methods/accounts/>)

Check relationships to other accounts = "Find out whether a given account is followed, blocked, muted, etc." (<https://docs.joinmastodon.org/methods/accounts/>)
Authorization = required, string; "Bearer <user token>"
(<https://docs.joinmastodon.org/methods/accounts/>)

Id[] = required, array; "Array of account IDs to check."
(<https://docs.joinmastodon.org/methods/accounts/>)

Search for matching accounts = "Search for matching accounts by username or display name." (<https://docs.joinmastodon.org/methods/accounts/>)

Authorization = required, string; "Bearer <user token>"
(<https://docs.joinmastodon.org/methods/accounts/>)

Q = required, string; "What to search for."
(<https://docs.joinmastodon.org/methods/accounts/>)

Limit = optional, string; "Maximum number of results. Defaults to 40."
(<https://docs.joinmastodon.org/methods/accounts/>)

Resolve = optional, string; "Attempt WebFinger lookup. Defaults to false. Use this when q is an exact address." (<https://docs.joinmastodon.org/methods/accounts/>)

Following = optional, string; "Only who the user is following. Defaults to false." (<https://docs.joinmastodon.org/methods/accounts/>)

5) Is there an Application Programming Interface (API) available for this platform? If yes, please provide the link for the platform.

Yes, there is an official API for Mastodon. The documentation for that API is here: <https://docs.joinmastodon.org/client/intro/>.

6) Does your assigned API provide a way to limit the search based on geolocation?

No, there is not a direct method for limiting searches based on geolocation.

7) Does the platform use any kind of filter to remove the content on their site?

Yes, to reduce spam, Mastodon requires an email address and signing up is rate-limited by IP address. Also, before a hashtag can start trending it must be approved (this is to decrease harassment or misinformation). The moderators also look at posts that have been reported to determine if it violates the site's code of conduct. The social media site also moderates posts related to racism. However, it is harder for the company to remove or filter this content because of the nature of it being decentralized.

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