NETS 2120

InstaLite Final Report

Team 2Y2B

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Report Link:

https://docs.google.com/document/d/1Hg8uWulvVMRUz1AGRhktCV0mYB-5qPMkprkmnNVLG1Y/edit?usp=sharing

Overview

InstaLite is an Instagram-like social media application developed as part of the NETS 2120 final project. At a high level, it provides users with a platform to share image and text-based posts, connect with friends, chat, and discover content through a ranking and recommendation system based on adsorption. Services include Node.js, JavaScript, RDS, DynamoDB, S3, EC2, EBS, EMR, Apache Kafka, Apache Spark, React, Python, ChromaDB, and more, versioned using Git. Natural Language Processing and embeddings provide a level of customization, and real-time updates, error handling, push notifications, and UI / UX design enables a level of sophistication. Security measures and auto-scaling ensures for a (almost) production-ready system.

(1) Key Design Decisions

Our team implemented the following core features.

User Management

- **User Signup**: New users can create accounts by providing a login name, password, first/last name, email, affiliation, and birthday. Passwords are salted and encrypted. Logging in sends the user to the profile page to upload an image and choose tags.
- **Profile Photo Upload**: Users can upload a profile photo which is sent to S3 (with a signed URL because of learner lab security restrictions). The profile photo is embedded and compared with the IMDB actor embedding to find the 5 closest matches, which the user can select from and link to. These matches are stored and can be changed at any time, or unlinked at any time.
- **Hashtag Interests**: Users can specify interest hashtags in their profile, with suggestions for the top-10 most popular tags, as well as search for other hashtags. These hashtags can also be added throughout posts as well. These hashtags are used to rank posts.
- **IMDB Actor Linking**: Users can link their profile to an IMDB actor by matching their selfie/uploaded photo embedding with the 5 most similar actors from a ChromaDB database. Changing the linked actor will make a public post.
- **User Login**: Secure login with user ID and password. We implemented most of the functionality for the reset password option, but had trouble with the email verification and never got it finished :(

Main Content Feed & User Page

- **Instagram-Style Feed**: Displays status updates and posts from friends as well as other people. Posts made on another user's feed appear on both. This shows new posts (via a short circuit) before the reranking runs, as well as after the reranking runs.
- **User Posts**: Users can create posts with optional images and text. Posts can also include a list of hashtags.
- **Feed Content Sources**:
    - Posts from friends and self.
    - Posts from other sites (Federated Posts).
    - Posts related to user's hashtag interests.
    - Highly ranked posts from non-friends (based on SocialRank and federated posts).
    - Posts from the Bluesky Feed (via Apache Kafka).
- **Commenting**: Users can comment on any visible post in a threaded manner, which persist for the entire lifetime of the post. Commenting updates in real-time and shows profile and usernames. Clicking on the username goes to the profile page of the user.
- **User Actions**: Users can "like" posts (and unlike them) with a nice animation. They can also bookmark posts (which goes into the profile page to browse later). Users can also share posts via a button that copies a public link to the clipboard.
- **Feed Updates & Ranking**:
    - The feed data is refreshed hourly, fetching new content from Kafka and recent platform activity.
    - An asynchronous Spark job runs hourly to compute post weights using the adsorption algorithm. Logging in/out, and visting some pages (i.e. the home page or publishing a new post) triggers a script that checks the last update and runs the job if needed.
    - The graph for adsorption includes users, movies, hashtags, and posts, with defined edge types and weights.

- **Navigation**: Top menu bar for access to profile, search, chat, and friends pages. Main feed has infinite scrolling, with new posts loading as the user reaches the bottom of their current page.

Secondary Screens & Features

- **Profile Page**:
    - Users can change their linked actor (from top-5 similar) from a modal or unlink overall.
    - Users can update their email and password (with confirmation)
    - Users can update their interest hashtags based on suggestions (top 10), and search for other hashtags.
    - Users can view their bookmarked posts.
    - You can view your posts and comment/interact with them still
    - If you are viewing someone else's profile, you can see send them a friend request (or accept/revoke it). If you are already friends with them, you can chat with them here, or unfriend them.
- **Add/Remove Friends**:
    - Users can manage their friend list (undirected "friend" relationships).
    - Users get a notification when a friend request is sent, accepted, declined, or a friend unfriends them
    - You can see which of your friends are online / offline
    - Users can get up to 10 friend recommendations based on their friends friendd's and our ranking algorithm graph structure.
- **Chat Mode**:
    - Friends can chat with each other.
    - You can send invites even when your friend is offline
    - You can create group chats at once (sends invites ot all of them), or by adding them to an existing chat (one by one or even in batches)
    - Solo chats are supported as notes to self.
    - Optimistic Messaging for low-network situations
    - Persistent chat history, with new users seeing all previous messages
    - System messages for when a user leaves / joins

    - Users can leave chats, with notifications for when they leave, as well as the name and icon updating in real-time
    - Creating groups that would have equivalent members of another group (or even batch inviting that would have the same members) is rejected.
    - Lots of error handling for chat invites, chat creation, and chat joining
    - Notifications when an invite is rejected, accepted, recieved, etc...
    - Invites Persist over time
    - Cannot send duplicate invites
    - Can send both DM's invites and group invites
    - Chat shows profile pictures as well
- **Natural Language Search (Chatbot)**:
    - Users can search for people and posts.
    - AI Summary uses RAG over movies as well as SQL over posts and users.
    - Always returns valid links to posts and users.
    - Can send/revoke friend requests from the search page
    - Can filter by only posts, only users or all.

Security and Scalability

- **Security**:
    - Password salting and encryption using Bcrypt
    - Session management to prevent impersonation.
    - Protection against unauthorized modification/deletion of content.
    - All routes are protected.
- **Scalability**:
    - Designed with scalable cloud services (e.g., EC2, RDS/DynamoDB, S3, Kafka, Spark).

(2) Technical Implementation Details

Technology Stack

- **Backend**: Node.js server with express with /api endpoints. Routes have protection. Most routes utilize async functions to allow for multiple connections at once. Hosted on an EC2 instance (with security protocols/groups) that the frontend connects to.
- **Database**: Most data stored in ~20 tables with RDS with a little bit of data stored in DynamoDB, and all images stored in S3 with signed URLs. ChromaDB hosted in docker on a EC2 instance for face embeddings and actor/movie embedding data. Stored with metadata that connects to RDS tables..
- **Large Object Storage**: Amazon S3 for profile photos and post images.
- **Natural Language Search**: GPT 4o with structured outputs and RAG (ChromaDB) used for semantic search and database queries. Data was pre-indexed to provide context (except for SQL queries, of course). Embeddings generated via OpenAI small models.
- **Social News Streaming**: Apache Kafka for the Bluesky movie feed and Federated Posts.
- **Adsorption Ranking**: Apache Spark, with the job invoked via Livy. The Spark job processes data from 3 tables (Federated, Bluesky, local Posts) to build the graph and writes ranked results back to a ranked post table in RDS that the feed service then queries. Comments / links are then written to a separate table that references the IDs in these ranked tables (works even if the posts are reshuffled in the rank table since it's based on the post ID, not the primary key).
- **Frontend**: React and JavaScript, served locally with Node.js.
- **Version Control**: Git and GitHub.

Key Design Decisions

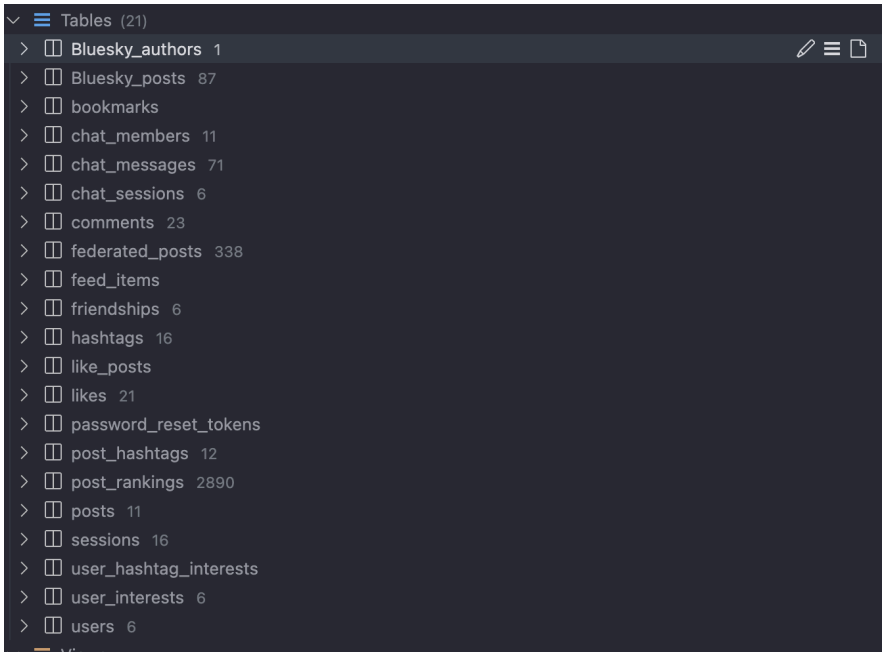
- **Database Schema**: We chose to structure most of our information into tables/SQL, since it allows for efficient and easy joins to get data and run analytics (for things like friend recommendations). We chose to include many tables since it

allows for updates to only need to happen in one place, and we used joins to get the relevant information.

Hosting images in S3 made sense since they're meant for large files and storing them on the server itself is not scalable. We create presigned URLs (because of learner lab restrictions) that we store the link to. Because of the restriction for time limits with signed URLs, we have validation for images to not have the default 'no-image' pictures, and instead show clean initials to replace the image when an image expires.

We chose 2 collections in Chroma, one for facial embeddings, and one for the movie/actor embeddings. For the movie/actor embeddings we created text summaries including the titles, actor name, year, etc... and stored the rest of the data in the metadata. Most tables have primary keys, allowing for indexing and efficient joins.

All posts are first put into separate tables, local posts, Bluesky posts, and federated posts, and then combined during the ranking process and stored in one table. This main table references the primary keys in the other tables, and also contains the adsorption ranking information for each user.



- **Security:** We use local storage and cookies to store session tokens, which are also stored in the database. These tokens are passed with API requests for authentication, and to retrieve things like username/user info on requests easily. These sessions are created on login and last some predetermined amount of time (a few hours) before they expire. All exposed routes require authentication before they can proceed (otherwise rerouted to the login page). All secrets like API keys are stored in a .env file.
- **Chat Implementation**: Chat uses web sockets and optimistic messaging for real-time communication, with all information being stored in an RDS database for persistence. Invites are persisted short-term on the server itself, and expire / are pruned regularly. All updates related to invites or users joining/leaving go through these web sockets, with toasts for alerts. We split messaging into two types: DMs and group chats. DMs display the username / profile picture, while group messages show the users involved and the number of users as the icon. We check for duplicate chats with all current members plus all pending invites plus all new invites, and also check against DMs. Since we have invite persistence, we allow requests to be sent to offline users as well, and just load it when the user comes online. We have system messages for when a user joins/leaves a chat, as well as the ability to send batch invites to users at once. You can create group chats all at once, or by inviting users to an existing chat, as well as having the ability to leave a chat. There is an 'invite center' with all pending invites, and once an invite is accepted it automatically navigates to the chat.
- **RAG for Search**: We used OpenAI embeddings and ChromaDB to find and search for relevant pre-index movie and actor information to answer questions. We also have the Chatbot create SQL queries over our post and user databases to provide more relevant information, that is combined with more hard SQL queries that split the query into words and check for subsequences in posts / usernames and first and last names. All posts and users have structured URLs so we can ensure that all URLs are correct. We use JSON output for easy parsing, and attach 'citations' with each query that we can display on the frontend. We add some prompt engineering to help reduce hallucinations.
- **Post Streaming:** We regularly poll the federated posts, as well as post to it whenever a user makes a new post. We then consume our own new post, so we can ignore our local posts table (except when we want some more information on

then post beyond the schema of federated posts. We also stream information from Bluesky via Kafka where we poll regularly.

- **Hashtags**

  Users can upload a comma-separated lists of hashtags when they create a post, that show up with the post itself. When a user joins the platform (or anytime in profile), they can search from a list of all hashtags to choose from, as well as a list of the top-10 on the platform. We also parse out hashtags from federated posts / Bluesky posts. This is used in the recommendation system to help recommend more apt posts.

- **Recommendations / Ranking**

  Every hour (triggered by regular API requests and a timer), a Spark job to run adsorption is sent to Livy to run, and all results are written to an RDS table. The home feed consumes this table to show for each user, filtered by the user. All likes/comments are indexed to the ID, so they maintain even after reranking. We add a recency bias, and also bias larger posts with more information and posts with pictures. We also add a small bias for posts on our own page. This all happens before normalization. We run adsorption for a fixed number of iterations or until convergence below a threshold is reached. We add edges for tags, likes, and comments, as well as friends. When posts (i.e. mainly Bluesky posts) have no links/edges to anyone else, we assign base links to everyone, so they are included in the final ranking and not isolated

- **Friend Recommendations**

  Using an adaptation of friends through a very large SQL / join statement, we create friend recommendations whenever a user visits the friends page (updates constantly). We weight a candidate more based on the number of friends that are also friends with them. We initially also had a tiebreaker based on how similar the adsorption results are, but removed this since we felt it was unnecessary and slowed down the script.

- **Hosting**

  We host everything on AWS. We chose to host every service separately (like backend, chroma, etc...) to have better isolation and easier management of

resources. We run items in docker with volumes for memory, and we use systemd to run in the background, auto restart on failure, and run on login. Services communicate to each other through the exposed APIs and VPC (although we couldn't get this configured for everything). Security policy and inbound rules (with some CORS) is used to limit requests.

- **Toasts and Push Notifications**

  The entire web app is wrapped in a websocket controller (different namespace from chat to ensure no conflicts). This wrapper also contains a context for toasts for error/success/info messages. The server can send toasts (push notifications / SSE) through this wrapper websocket, and the frontend can also send toasts itself by invoking its context.

Changes & Lessons

- We initially just stored everything in DynamoDB since we felt it was the easiest to use and the easiest to change we had more fields to add / wanted to change the schema. However, we realized that it was hard to run analysis on this, or to join data from multiple collections, and was just harder to work with as our service grew. As a result, we should to RDS, which was more structured and rigid, but ultimately made a lot of other things easier to do. We learned how effective these structured databases can be, even if they seem harder to work with initially.
- We also initially stored multiple copies of information everywhere. For example, us profile picture was stored in both the user table and the post table. However, this meant when the picture was changed, we needed to make multiple changes, and our code became more and more messy. We eventually changed to making as many tables as necessary and instead joining data together. We learned that even though this was more work when we needed to query or get information, it was much, much easier to work with when needing to ensure one source of ground truth data and when needing to update data.
- We did not store invites and many things related to the chat initially. We would just broadcast it over the websocket. However, this led to a lot of issues like duplicate

invites or losing information that we needed to join between different events. As a result, we switched to storing things in the database / server, and we learned the importance of persistence of everything, even if it seems redundant at the start.

- Our chatbot initially was not as adaptive. We gave it strict restrictions on what it can query from the database, which made most requests to it not provide any useful results. Later on, we allowed it to query its own search results and generate the query itself, so it can be more dynamic with filters and the like. We also had to later add heads alongside the schema since we realized the schema was a bit vague. We also had it initially be recursive / edit itself when it realized its query was wrong in a Chain-of-thought / agenetic behavior, but it just self-looped often (likely because its own context was messing it up) and we realized it was just better to throw an error and ask the user to try again (we think a bigger model like o1 or o4-mini would've been more effective, albeit more expensive, at this).
- We also made all our AWS services use the same security group since it was just easier to do, and we thought they all really needed the same security anyway. However, we realized this led to a lot of issues, especially with cross-service communication, and messed up our services a lot. We ended up spending a good amount of time with custom security groups which made it a lot easier to work with afterward, and we had a lot less errors with communication between services.

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(3) Extra Credit Features Implemented

We included a lot of small extra credit, as well as major extra credit features, many of which were listed in the spec, and many which we came up with ourselves.
We're listing everything that we think may be defined as extra credit, but we're not sure if they're all included.

Major

- Web sockets for the chat: chat namespace websocket for real-time chat updates. The message sent to the server is then sent to all clients in the chat in almost

real-time without long polling. Updates like chat requests, invites, declined invites, leaving chat, etc... are also sent through the websocket.

- Web sockets for main application: presence namespace websocket maintains a list of active users (with counting for duplicate sessions) for push notifications and active friend management. A new session updates immediately, and a force closes session (window close) updates after at most 45 seconds when a periodic heartbeat fails.
- Users can create unique links to posts to share (automatically copied to clipboard via the share button).
- Users can bookmark posts, and all bookmarks show up in your profile page.
- Infinite scrolling: reaching 3/4 to the bottom of the page, loads the next 10 posts (with debouncing), that looks almost seamless.
- LLM always returns valid URLs to posts and users.
- LinkedIn-style / two-way friend requests.
- Toasts: all notifications come through a custom toast notification system that is in the right corner and comes in varieties (success, error, warning, info). You can attach custom components for actions like page visits, etc.
- Server-side notifications (SSE) / push notifications. Obviously we can't do proper push notifications since it's a web app, but no matter what page you're on, you can get a notification (across all open windows). The server can also send notifications to the frontend (like when friend request).
- Auto reconnection. When Wi-Fi drops, the server displays a bad connection error, and retires every few seconds until it reconnects.
- LOTS of (nice) error handling for almost everything. We haven't had the server ever crash, or anything fail silently without an error message (toast) that is displayed nicely. Users are notified of every error, and some failed actions have 'retry' messages when it fails.
- We also spent a lot of time on making the UI look really nice! All custom styles and UI that is mostly consistent across pages and displays information as nicely as possible (e.g. modals, custom reusable components, shadows). We tried to make all information as digestible and pleasant to the eye as possible!
- The LLM generates and runs SQL over the user/posts database to get relevant results.

- (Almost) Everything updates in real-time without needed to refresh the page (or automated refreshing). Adding a comment/liking a post, changing your username, linking an actor, sending a friend request, a user going offline, creating a post, etc... all show their changes in real-time using react hooks and useEffect. The one thing that doesn't update in real-time is when you upload a profile picture it doesn't show the updated picture in the profile page (because of some consequences of our design choice; but it does show a preview)
- Preemptive post showing. Shows posts to friends when first made, before the reranking algorithm runs (since it won't run for at most another hour). Still shows in the feed and in your profile.

Moderate

- Optimistic messaging for chat. Sending a message (with slow network) shows up on your side (but slightly gray). Once sent to the server with confirmation / acknowledged by the server (through the websocket), it is then confirmed (no longer grayed out).
- Rejection Logic: Chat invites are persisted, and sending extra invites will compare with all current invites as well as current group members. If the max potential group equals a current group (in members), the invites are rejected (as in the spec, with a bit more complexity).
- Top 5 embedding matches are always stored, so you can switch to one at any time (as well as unlink at any time)
- Profile page also includes all your posts (and you can still interact with them), ordered by time
- Can send friend requests / accept them from the search page.
- You can unfriend someone :(
- Can create group chats at once: creates an empty chat with just you and sends invites to everyone else.
- All pages and routes have authentication wrappers to (a) prevent unauthorized access (b) send the users to the login page if not logged in, and (c) get the user data easily in requests
- Auto homepage redirection when already logged in (using cookies)

- Loading text (like when opening a page) a disabled button to prevent issues when already pressed (until ready again).
- Notifications when someone unfriends/friends you or sends a request
- Notifications when someone sends you a message
- Friend Recommendations recompute on every page load, not just every hour
- Auto restart services in AWS on crash, and run in background and on login.

Minor

- Special system messages for when a user joins and leaves a chat that persists.
- Chats with just yourself are considered notes to self and can still be used.
- Duplicated Invite handling in chat
- Persistent Invite handling
- Can send multiple invites to the same user for DMs and chats. Chat invites include all other members in the chat in the description.
- Commenting includes profile picture, name (with link to profile)
- background tasks and auto reloads in AWS if the server crashes
- Nice little animation when you like a post, lol.
- Can visit profile from post
- Can unlink an actor from your profile.
- Little error handling when your profile image isn't valid -- even if the URL exists but isn't valid (i.e. a separate fetch to test) -- (if in profile and it's your image, it says please upload image), otherwise it shows the first letter of your name in a nice font.
- Can chat and unfriend/friend/accept/decline/remove friend requests from the profile page
- Natural timestamps: Shows how long you've been friends with someone (since today, 3 hours ago, etc...). Same type of natural language timestamp for posts.
- Chatbot lets you know when it doesn't know something rather than give overly confident answers.

Never Realized (but some code is there)

- Stories, add the route to post a story, but didn't have time to implement the UI

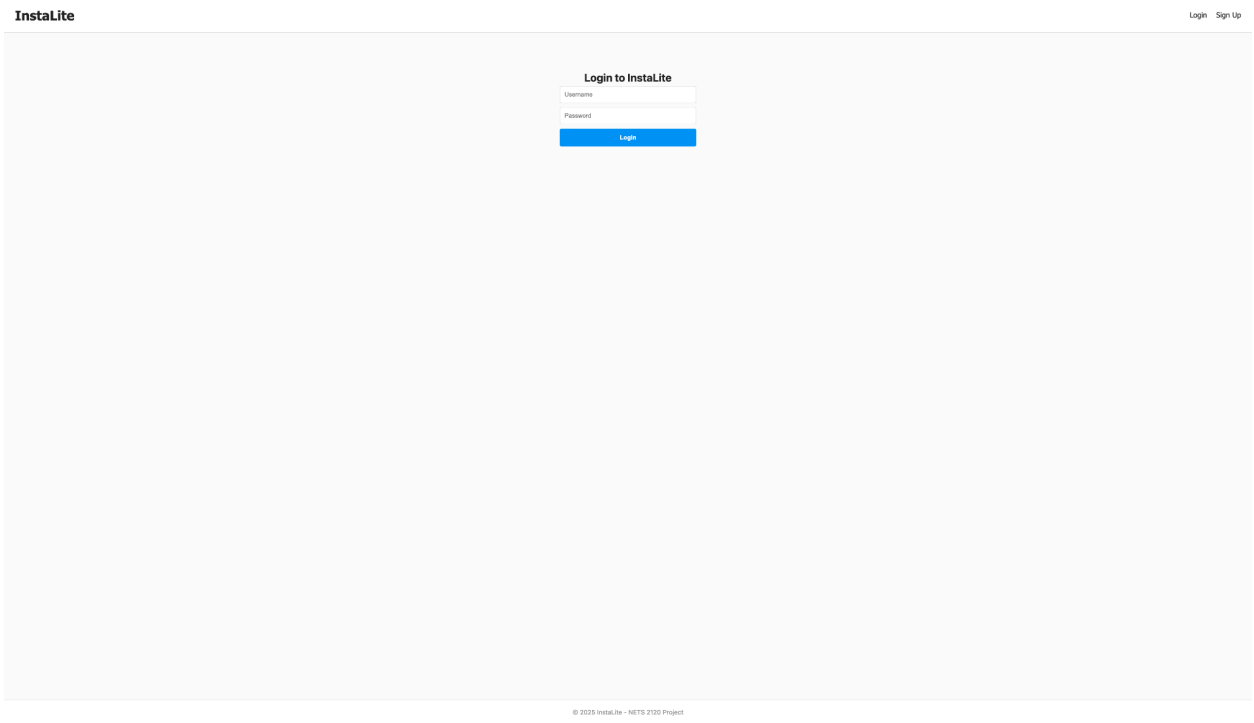
- Multi-image posts, all routes support multiple images (but didn't have time to implement the UI again)
- Forgot Password, have all the UI and routes, but the emails were never sending for some reason.
- View trending posts and be able to visit all posts related to a tag (wrote some UI, didn't finish backend in time)
- Can view profile of users not in database (federated posts), kind of works but very buggy.

(4) Source Files

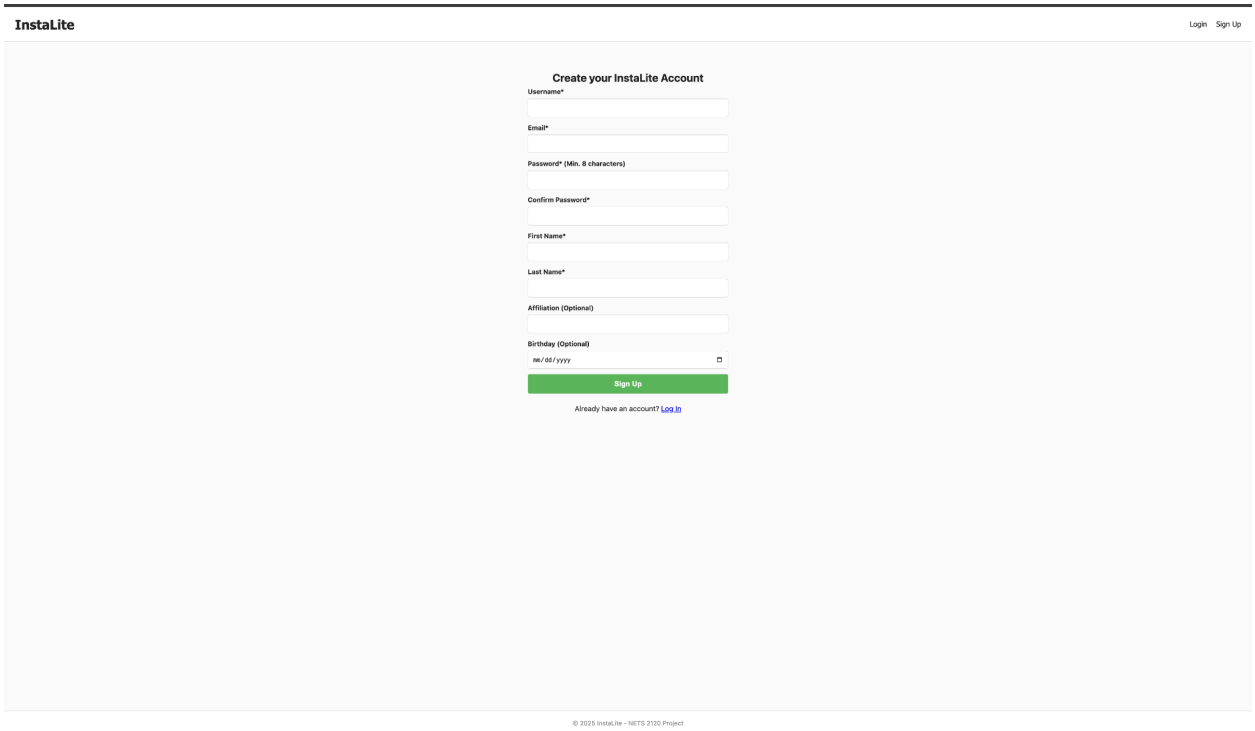
- `backend/`: Contains all Node.js/Java backend server code and RDS communication logic.
    - `server.js` / `MainApplication.java`: Main entry point and routing.
    - `routes/`: API endpoint definitions.
    - `models/`: Facial Detection models.
    - `services/`: Prescence service for online/offline detection with heartbeat.
- `frontend/`: Contains all React frontend code.
    - `src/components/`: Reusable UI components and page components
    - `src/contexts/`: Toast Context for push notifications.
    - `src/App.js`: Main application component including topbar and routing.
- `Indexing/ and movies/`: Contains all code to join datases, index, and upload movie/actor data with custom batch embedding logic.
- `src/main/`: Contains the Livy and Spark application code
    - `src/main/java/` or `src/main/scala/`: Spark job source.
    - `pom.xml` or `build.sbt`: Build configuration.

(5) Application Images

Login Page



Sign Up Page


InstaLite
Login
Sign Up
Create your InstaLite Account
Username*
Email*
Password* (Min. 8 characters)
Confirm Password*
First Name*
Last Name*
Affiliation (Optional)
Birthday (Optional)
mm/dd/yyyy
Sign Up
Already have an account? Log In
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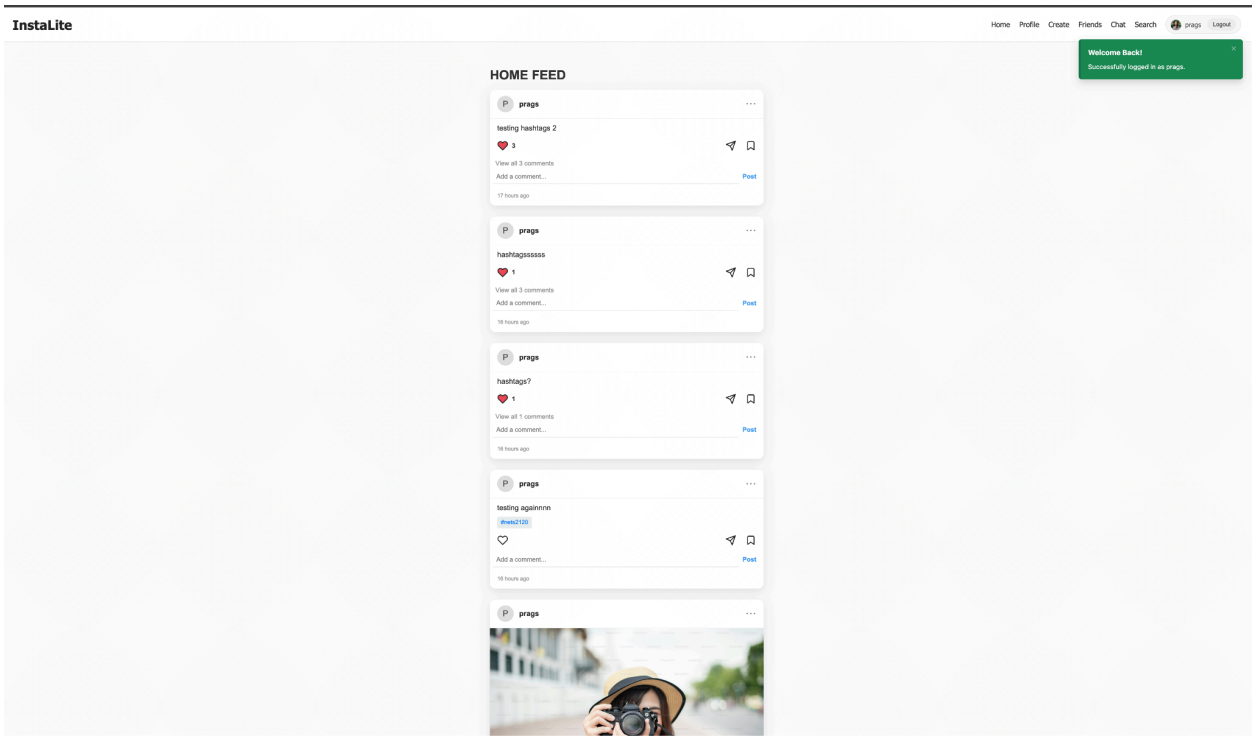
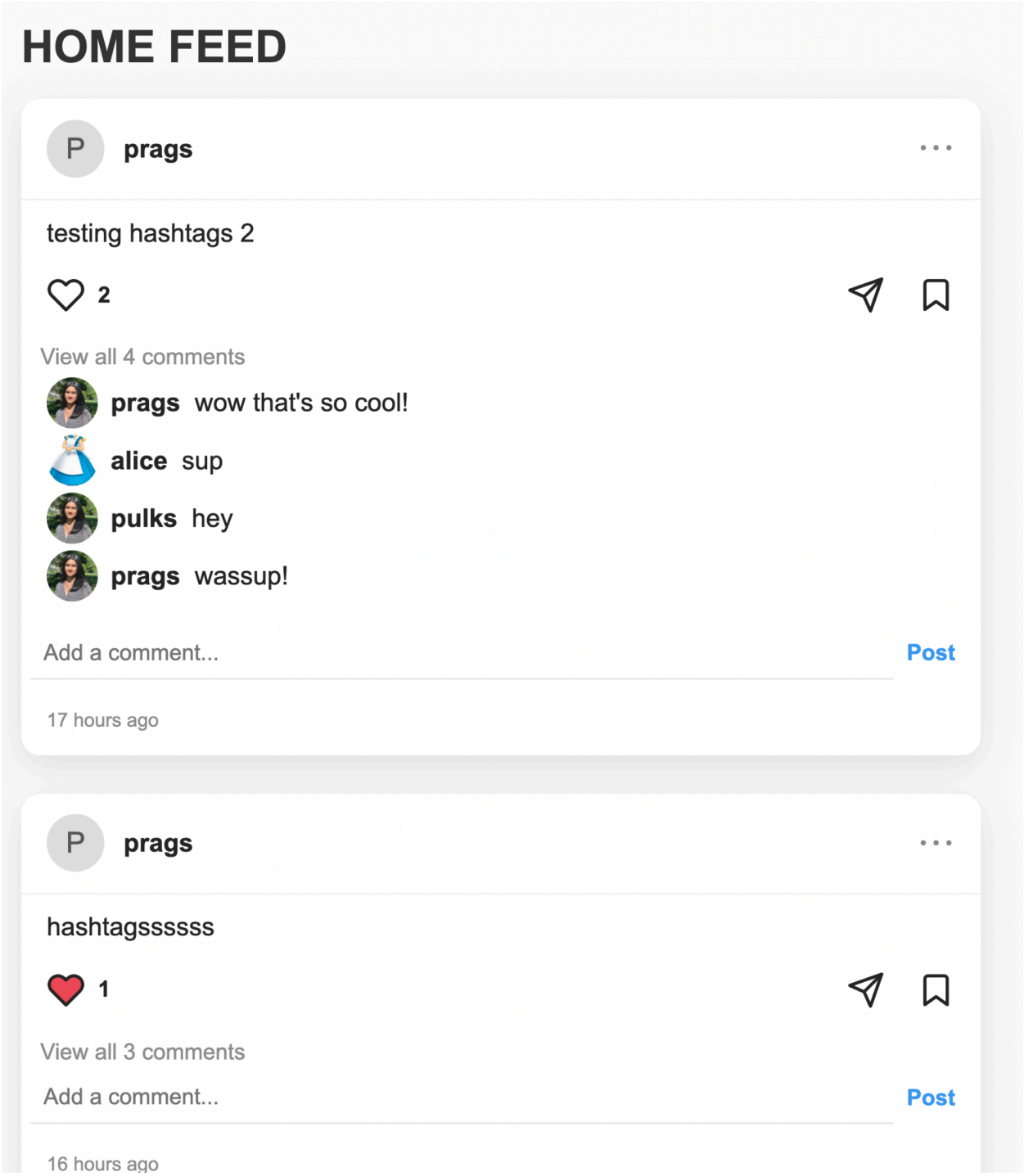
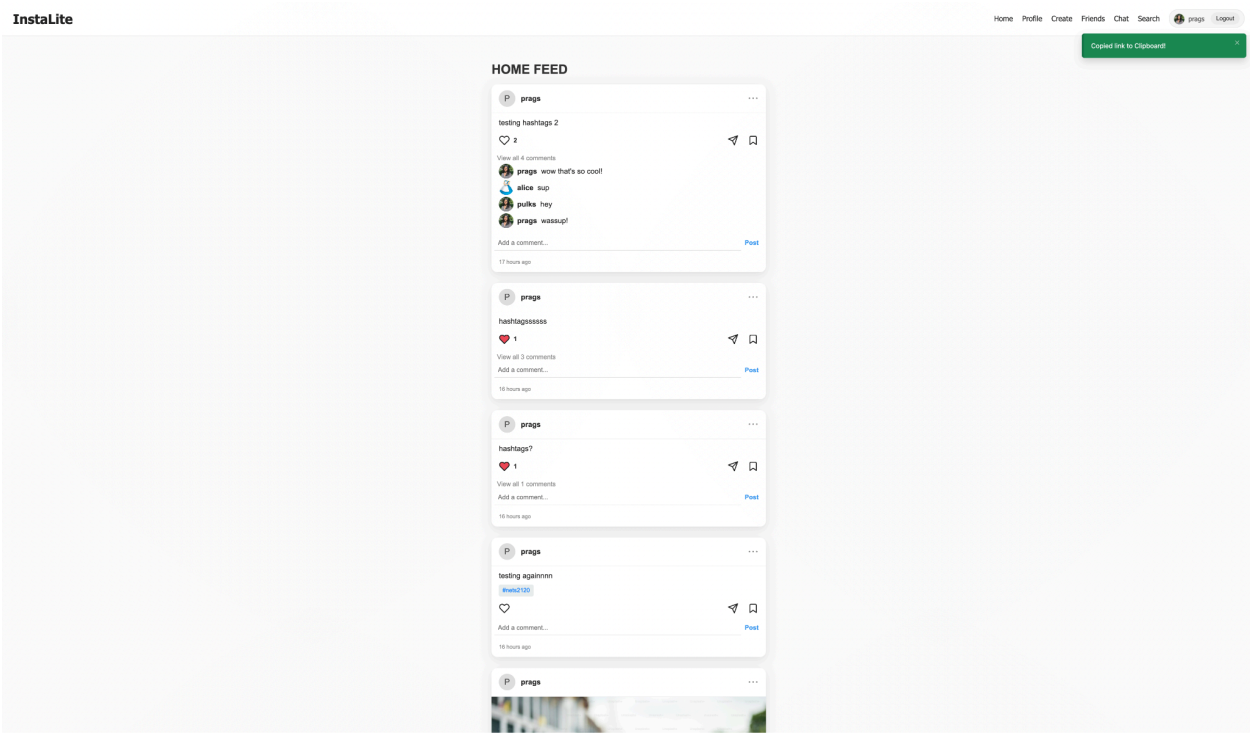
Login (Toast) and Home Page



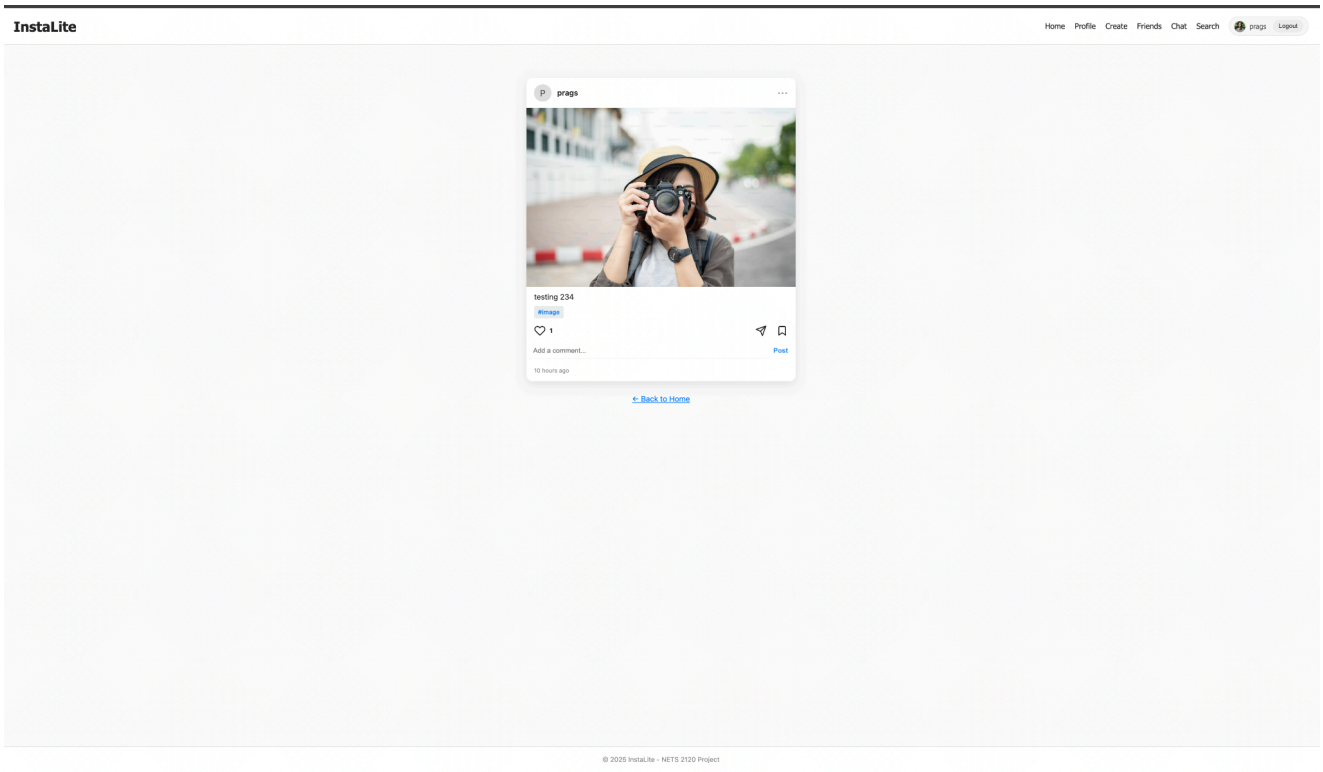
Comments (Folded and Unfolded) + Liking Messages



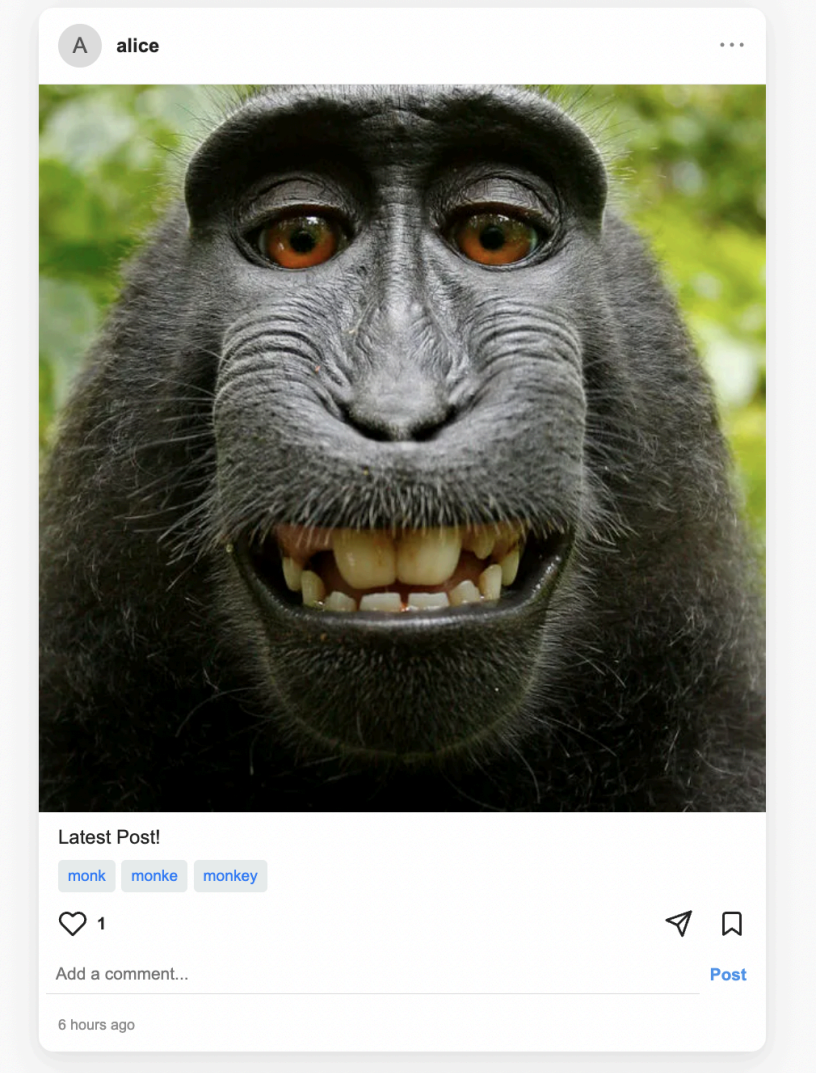
Pressing “Share” Button



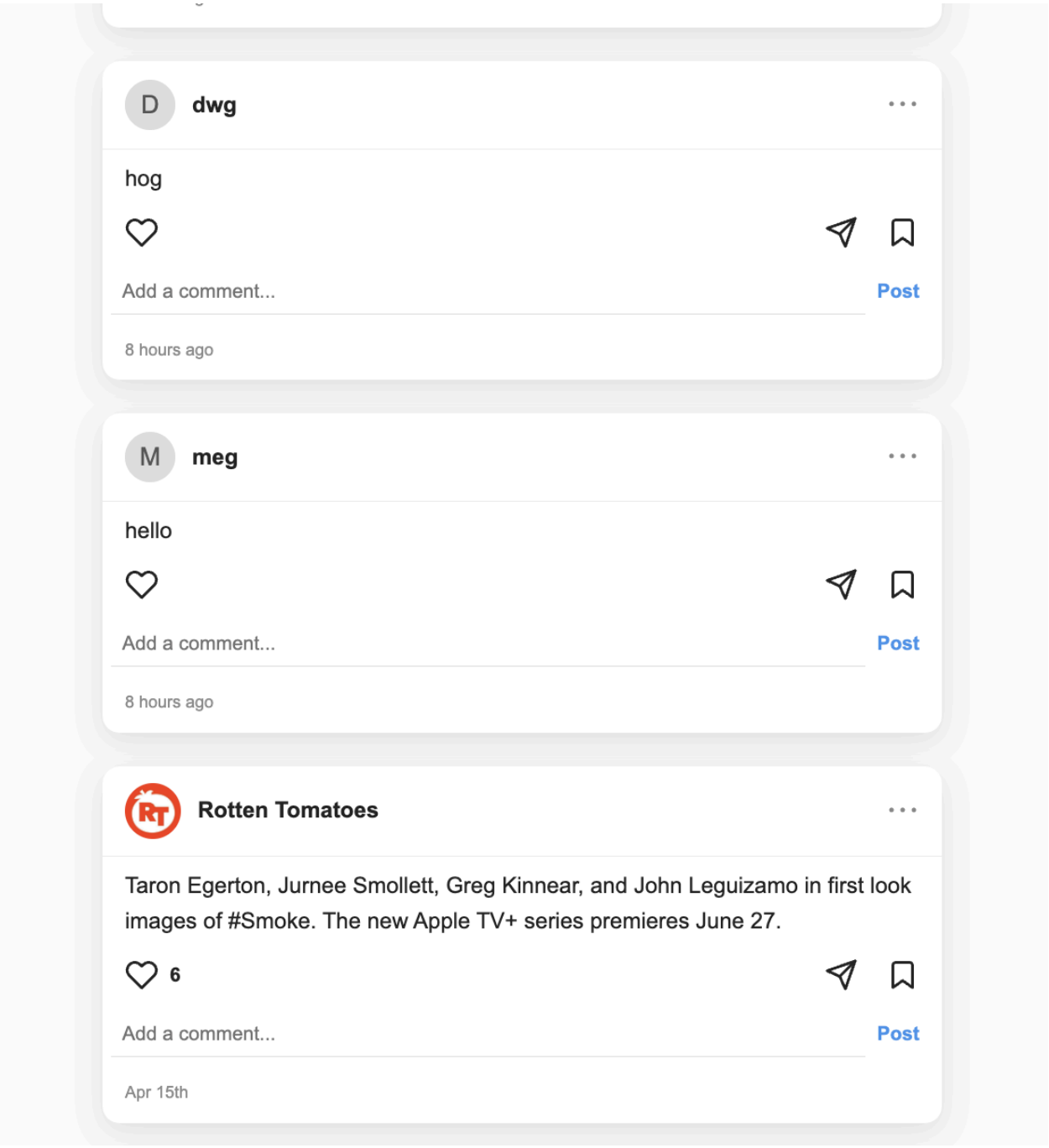
Shared / Single Post View



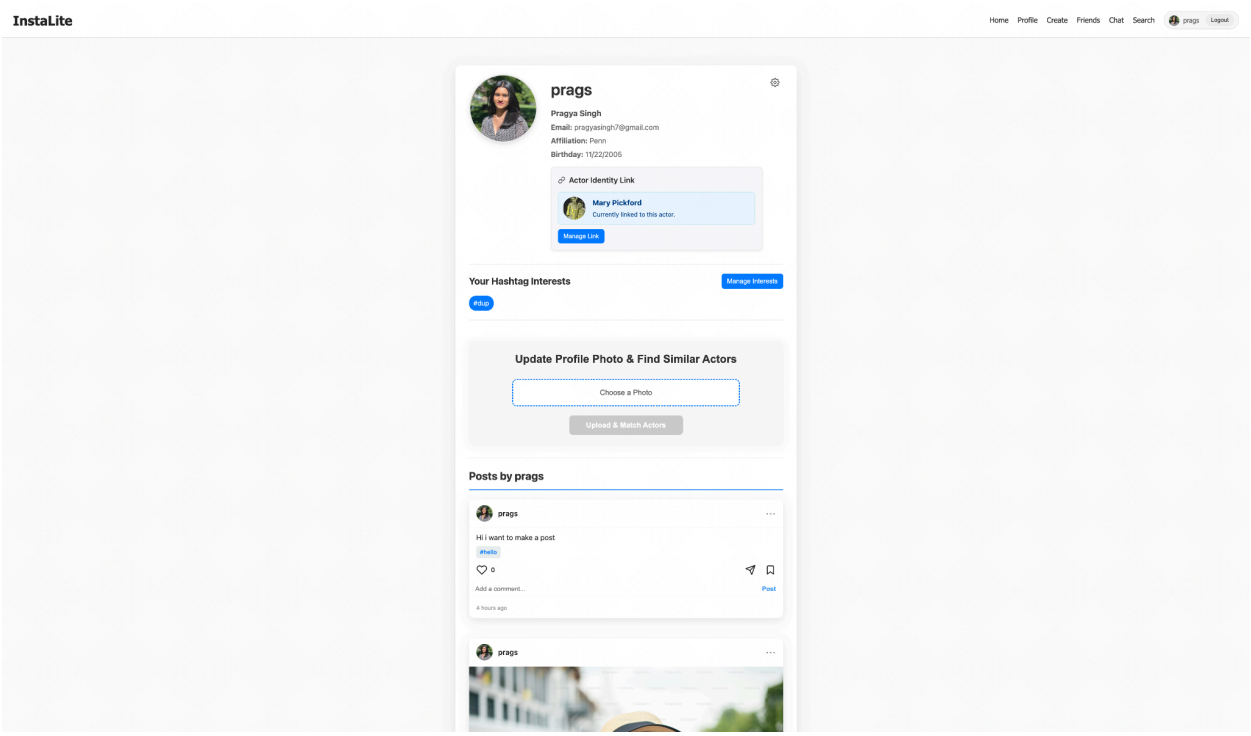
Post with Tags



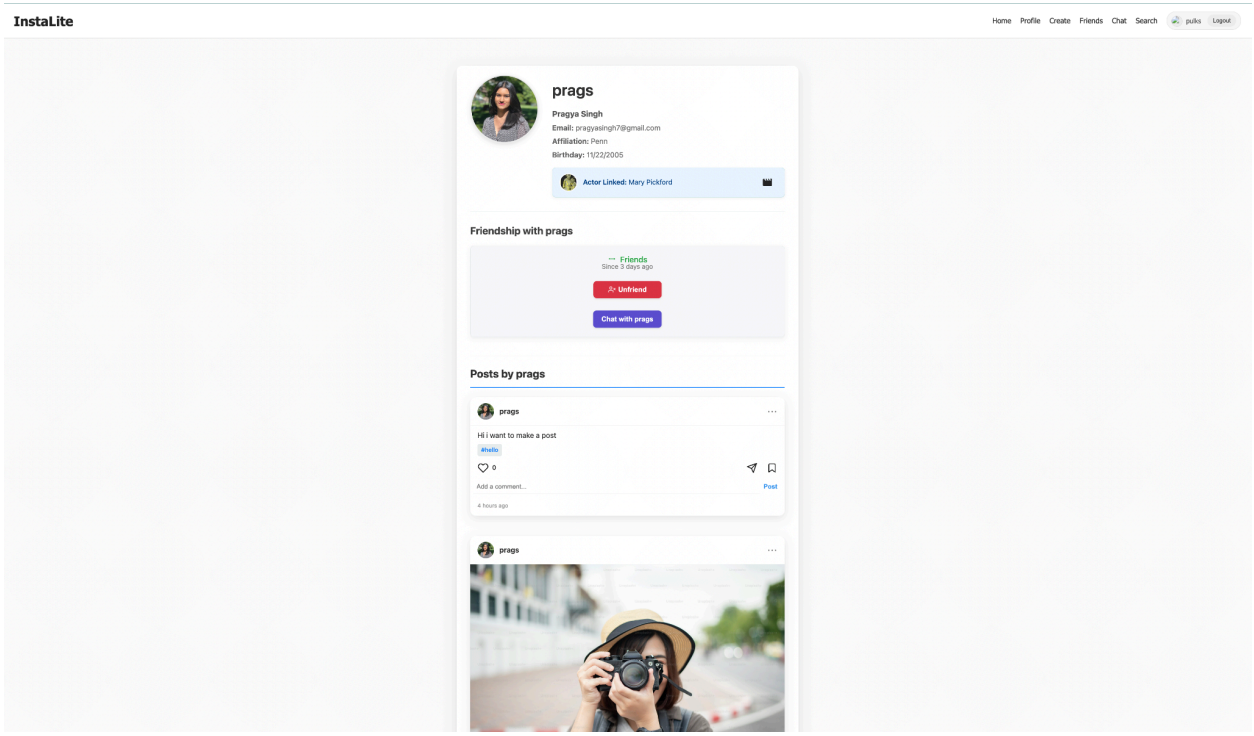
Bluesky + Federated Posts + Infinite Scrolling



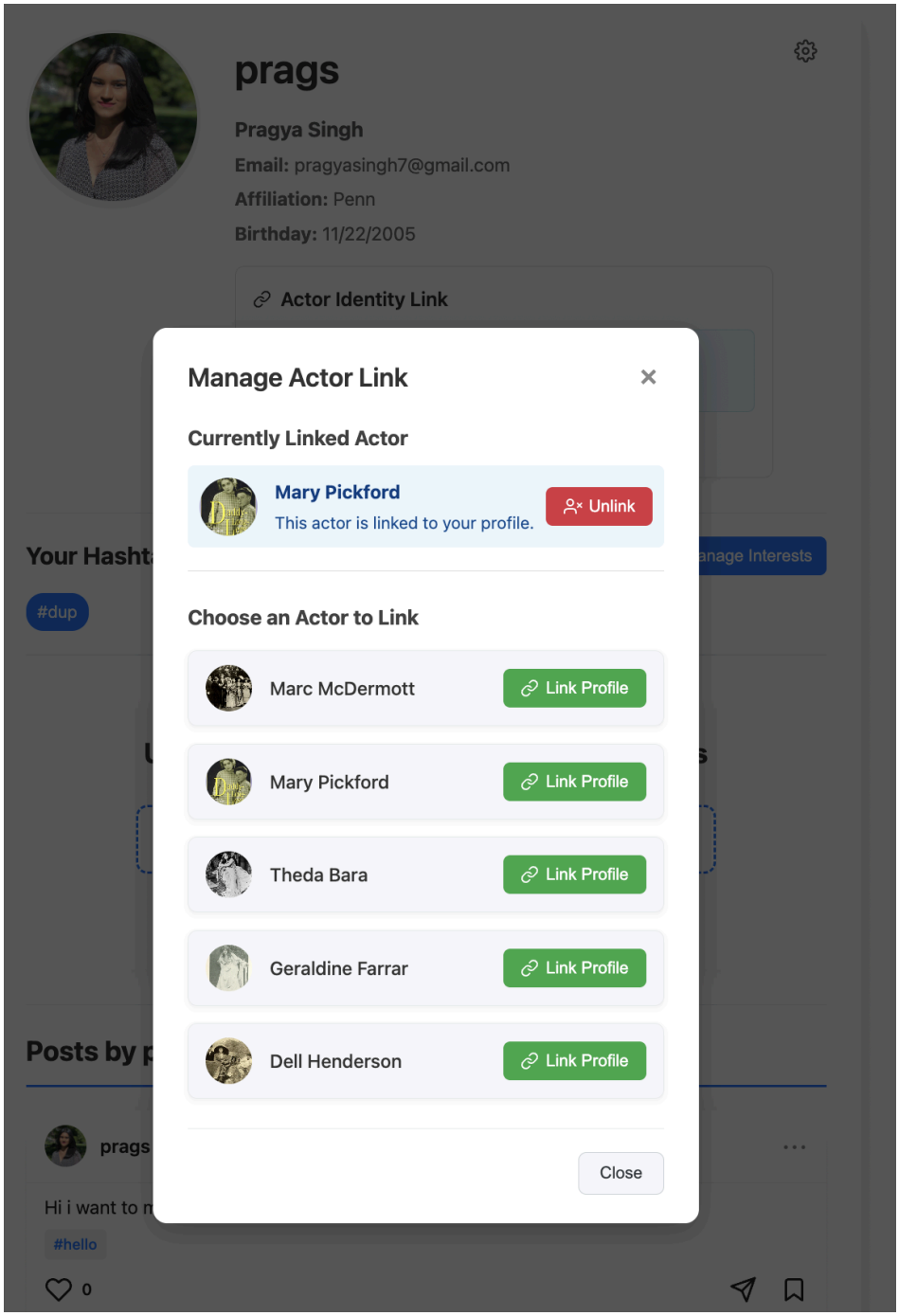
Profile Page



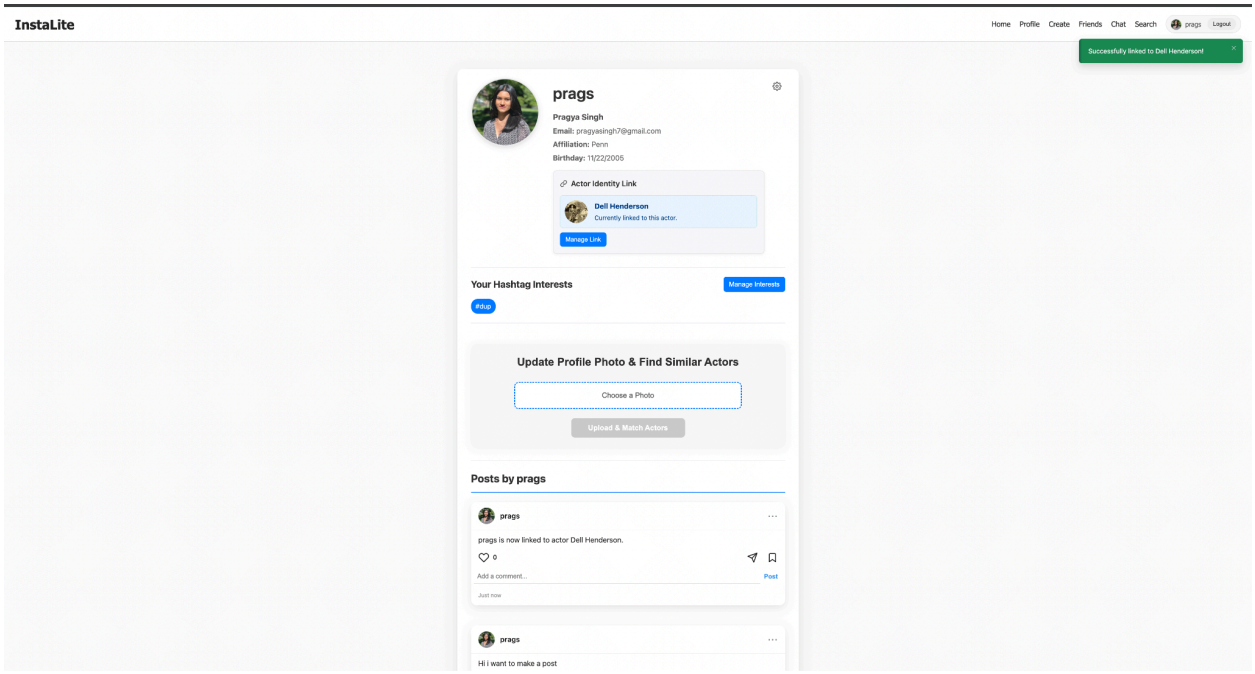
Profile Page (Different Account)



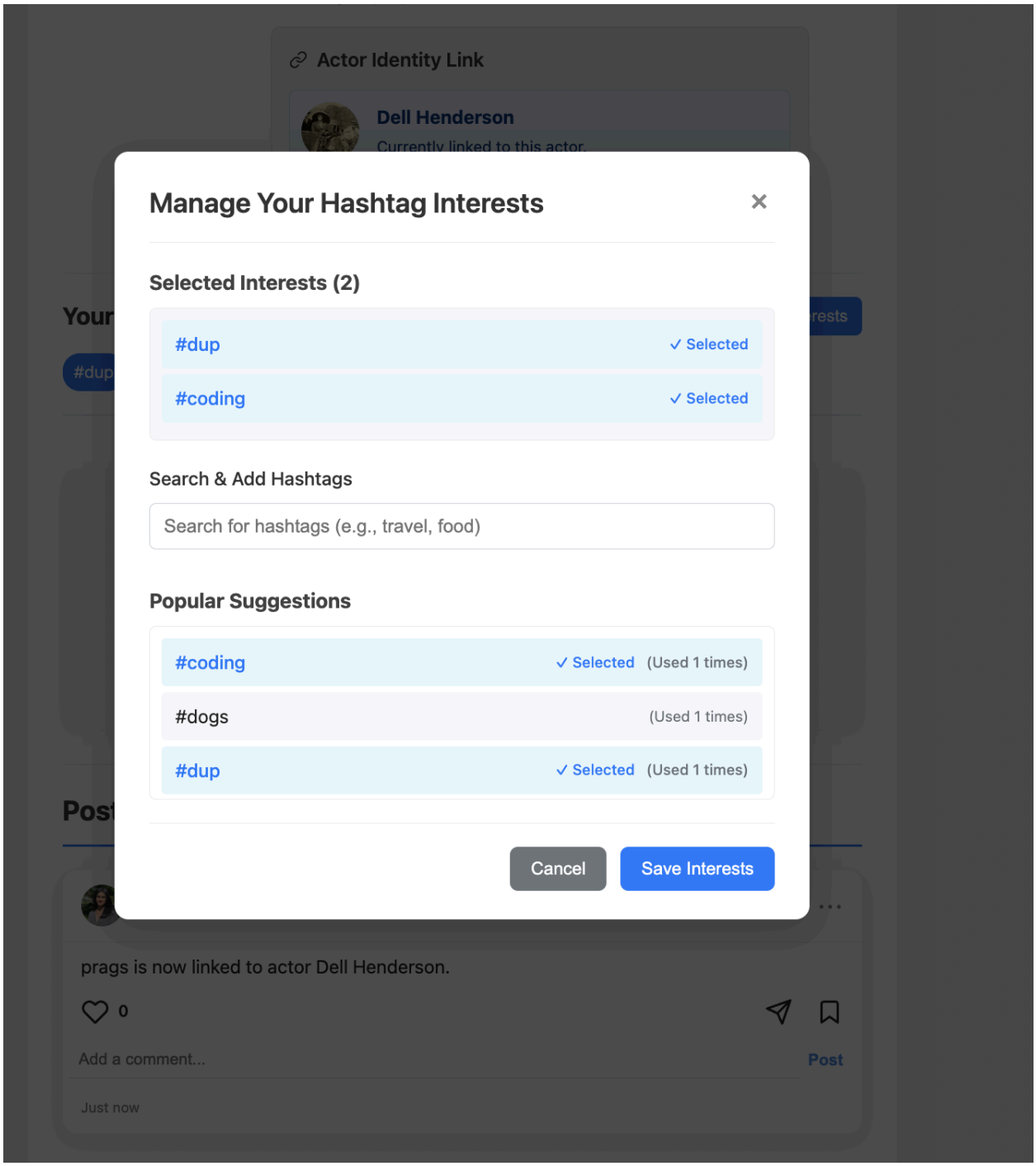
Manage / Unlink Actors Modal



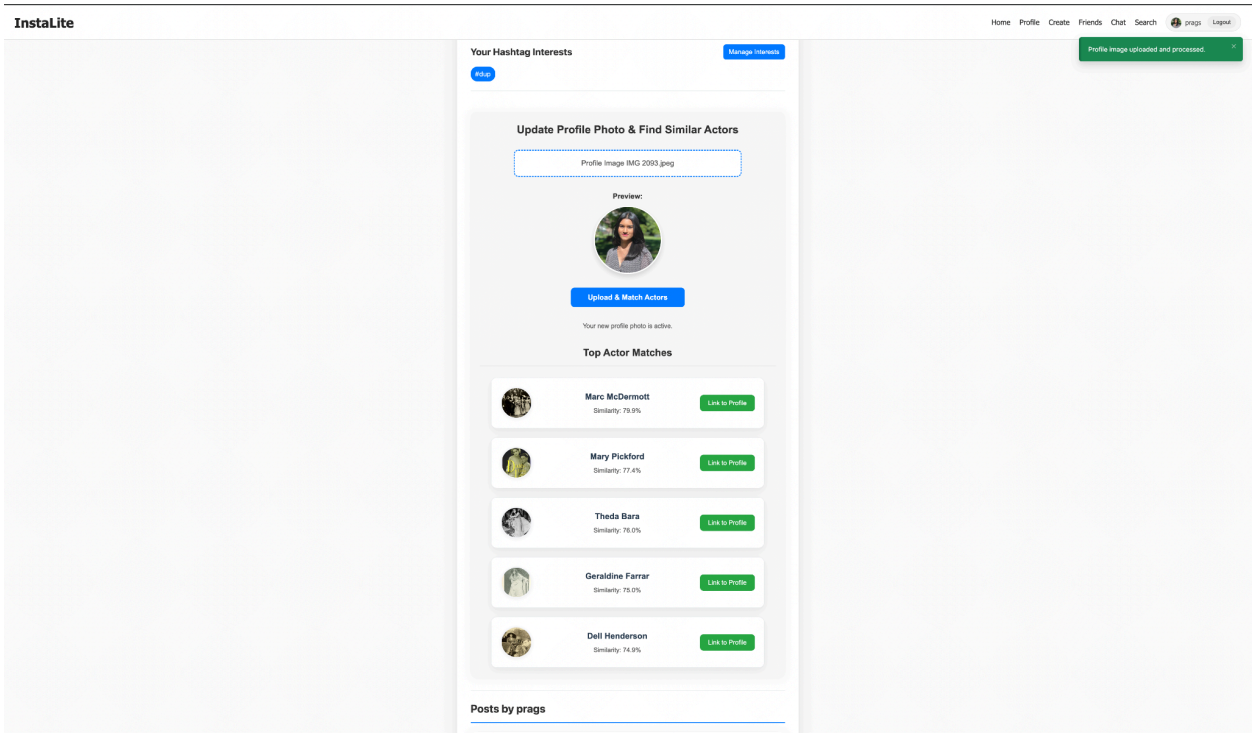
Changing Actor + Auto Post



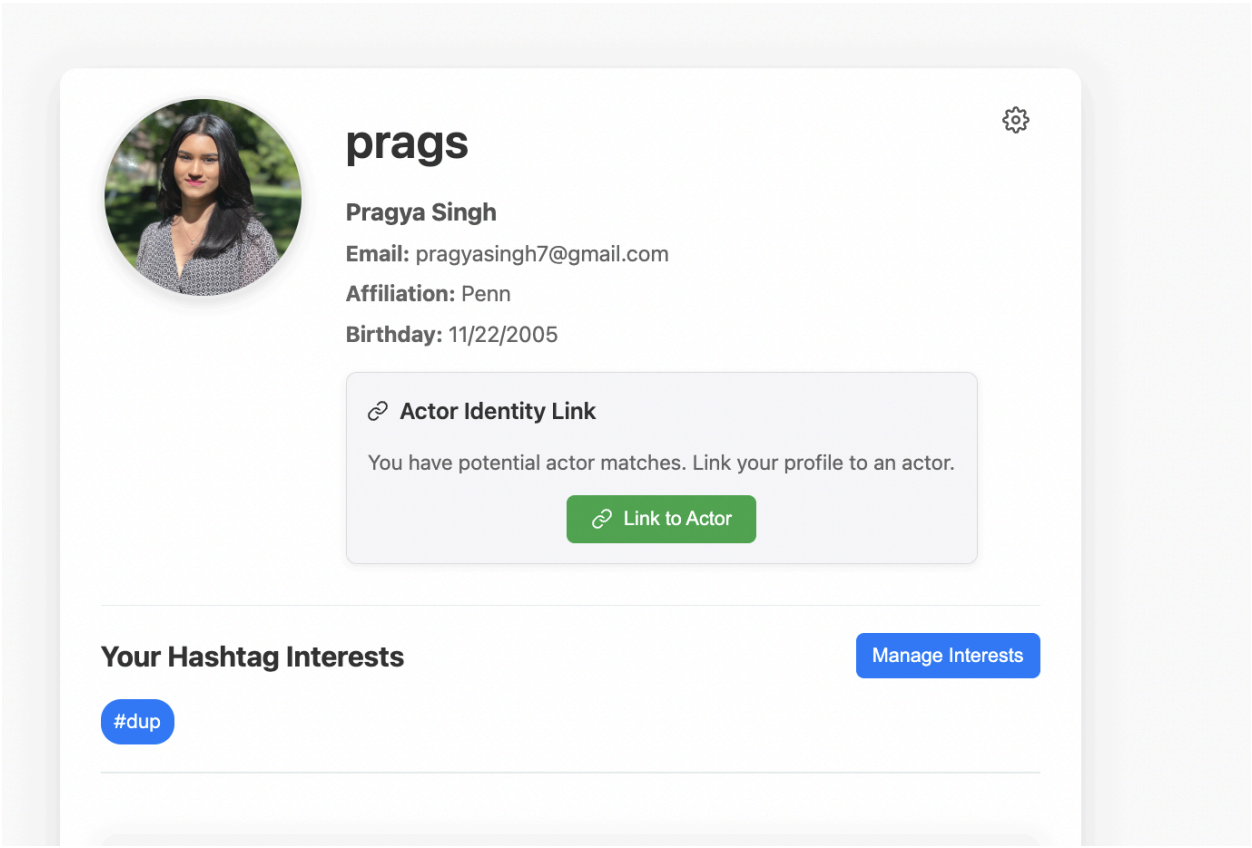
Changing Tags Modal



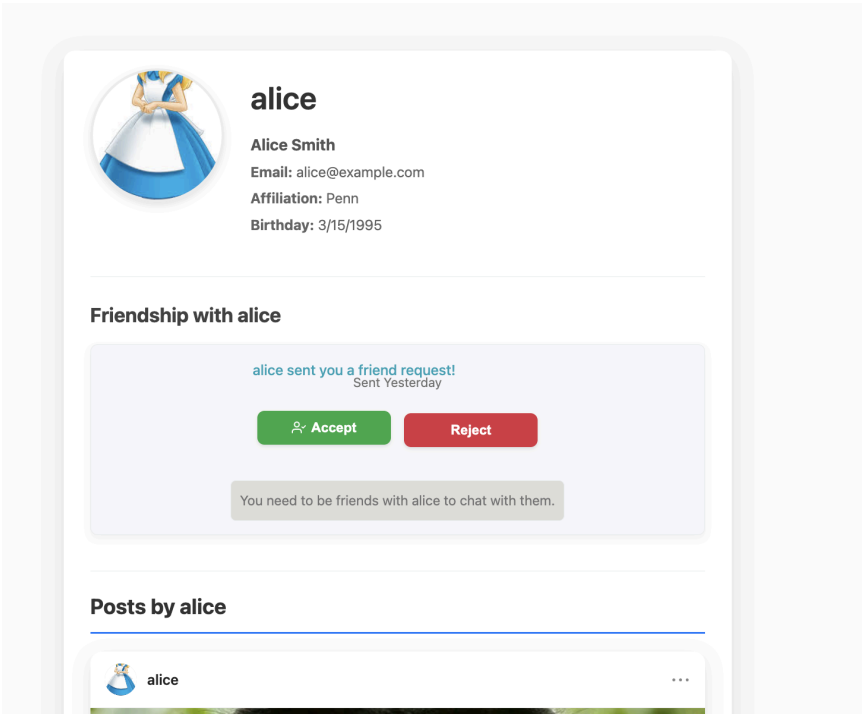
Uploading Profile Picture + Choose Initial Matches

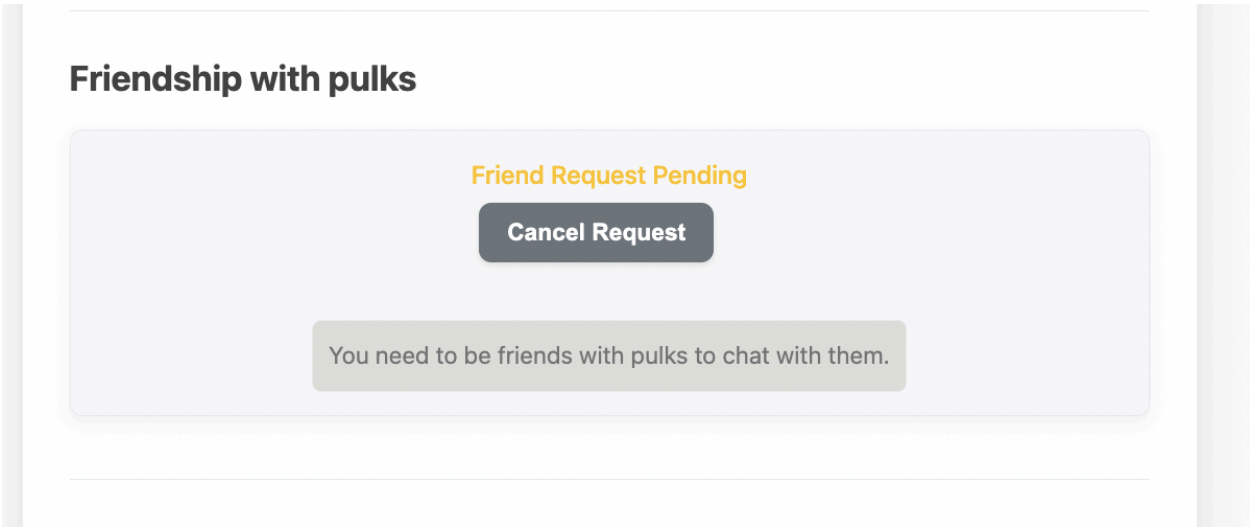


No linked actor / unlink result

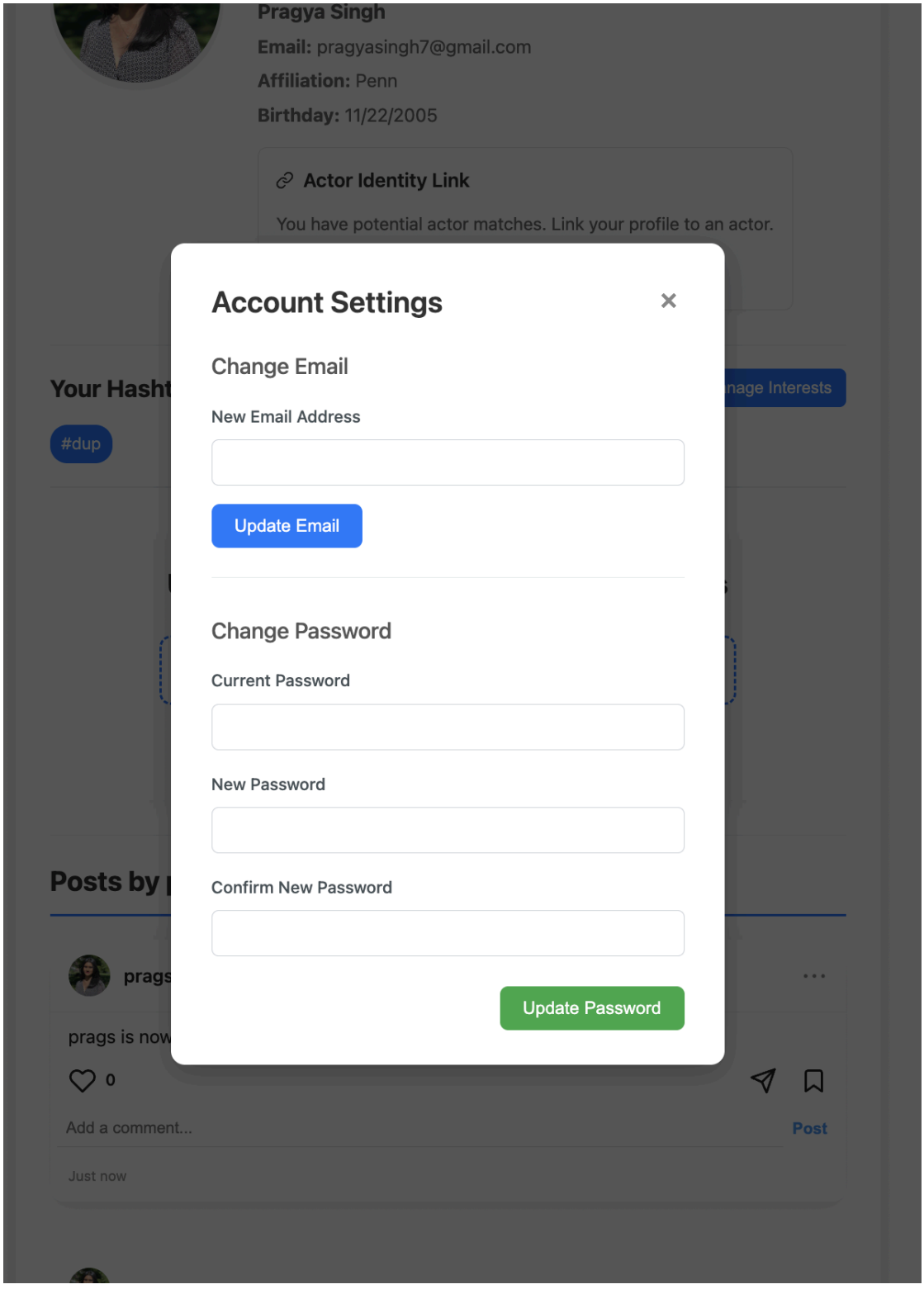


Profile with Pending Request

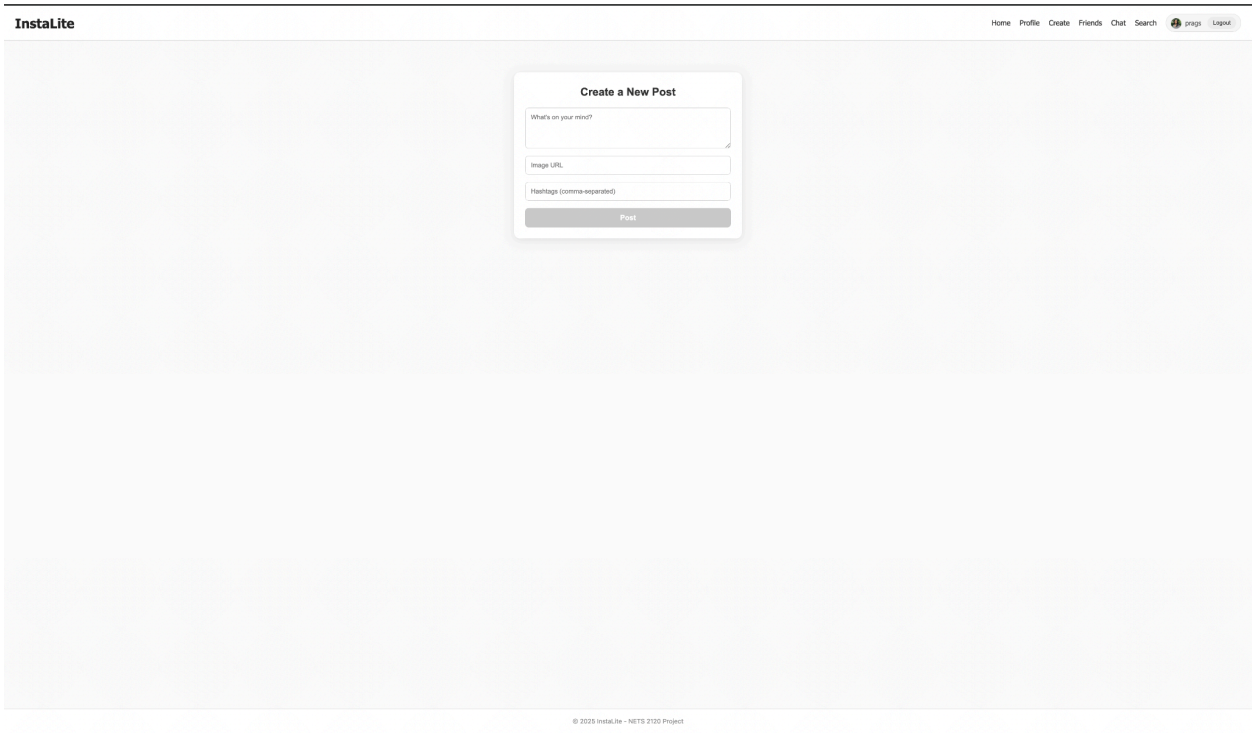




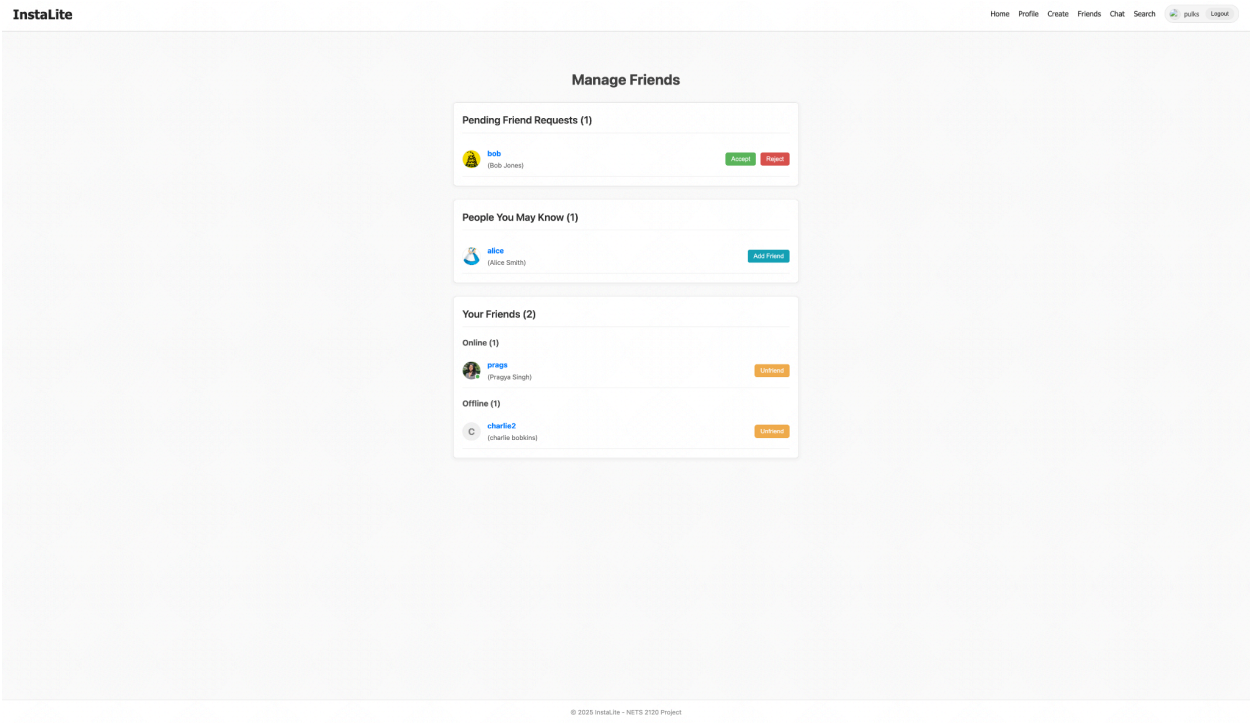
Change Username / Password



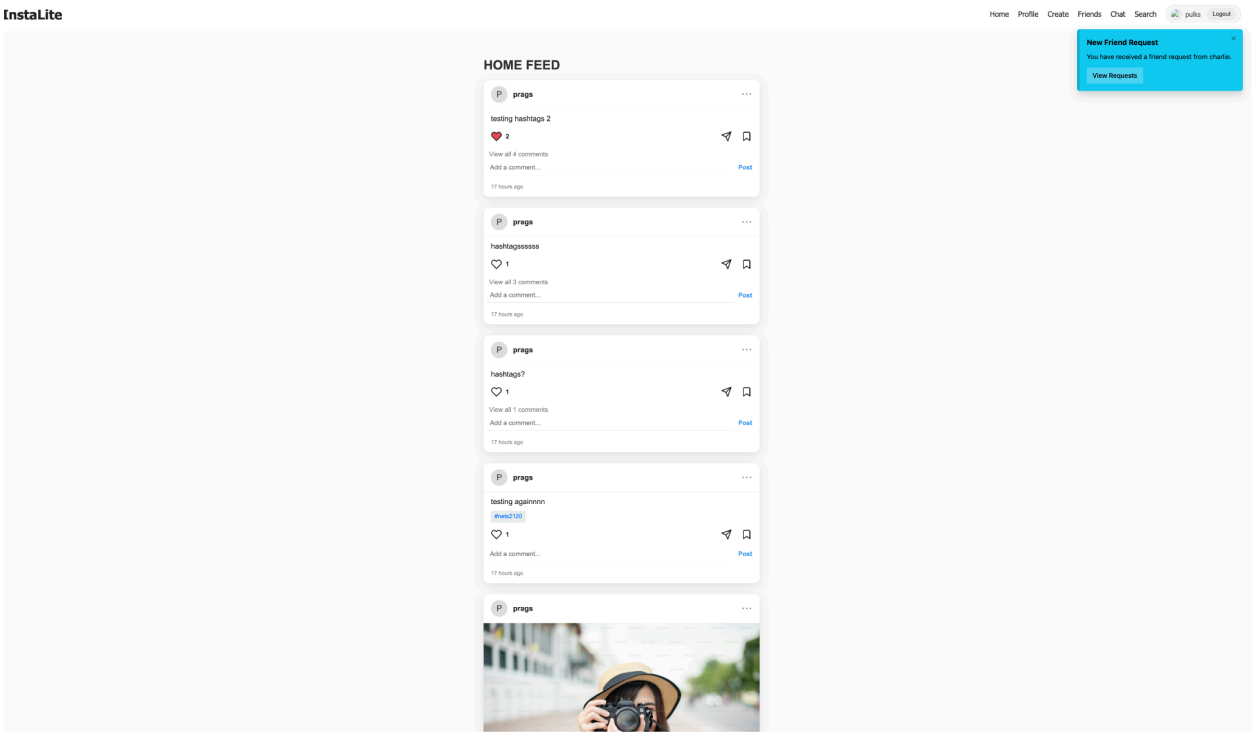
Create Post Page



Friends Page + Friend Recommendations + Pending Friend Request + Offline / Online Friends + Unfriend + Invalid Profile Picture – (Charlie; shows first letter of their name as icon)

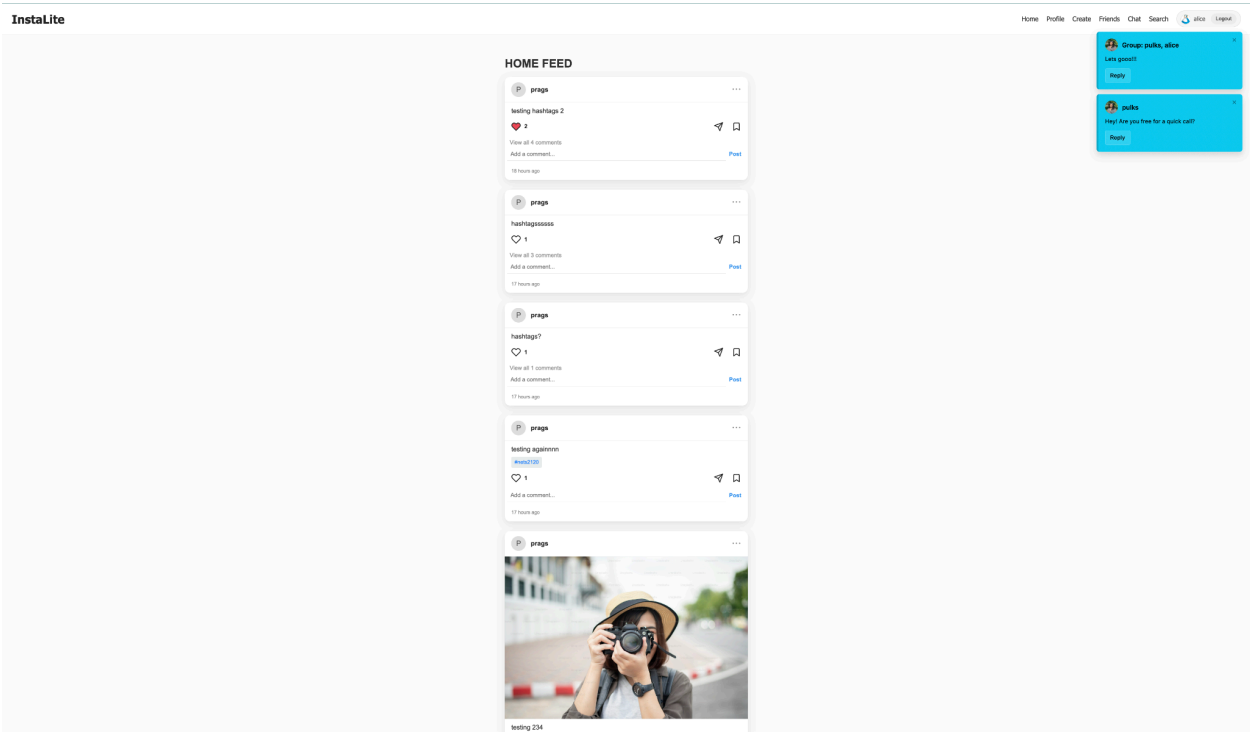


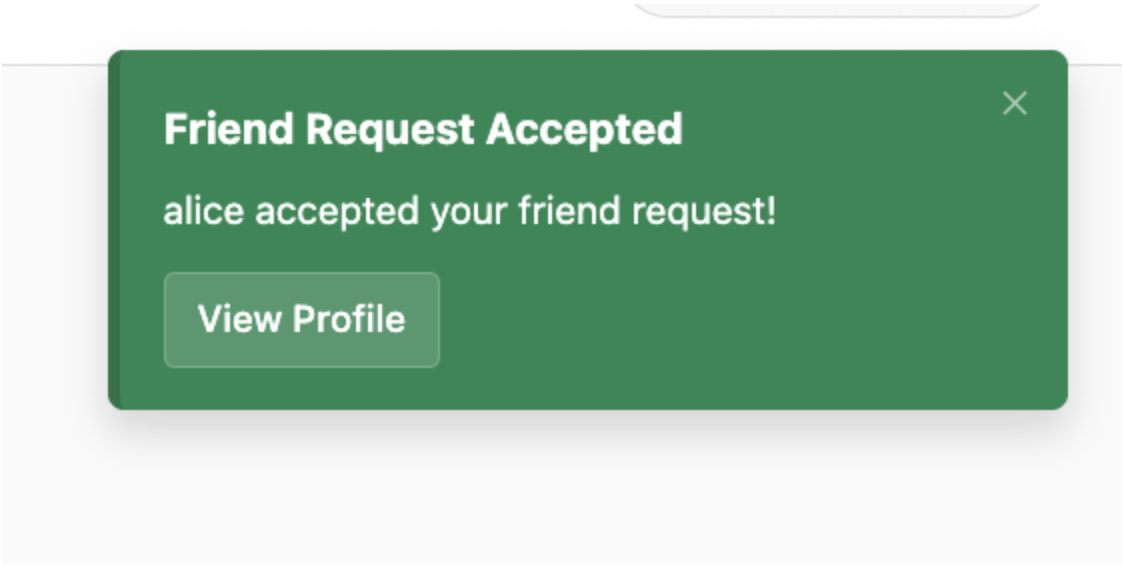
Push Notifications (friend request + interaction)

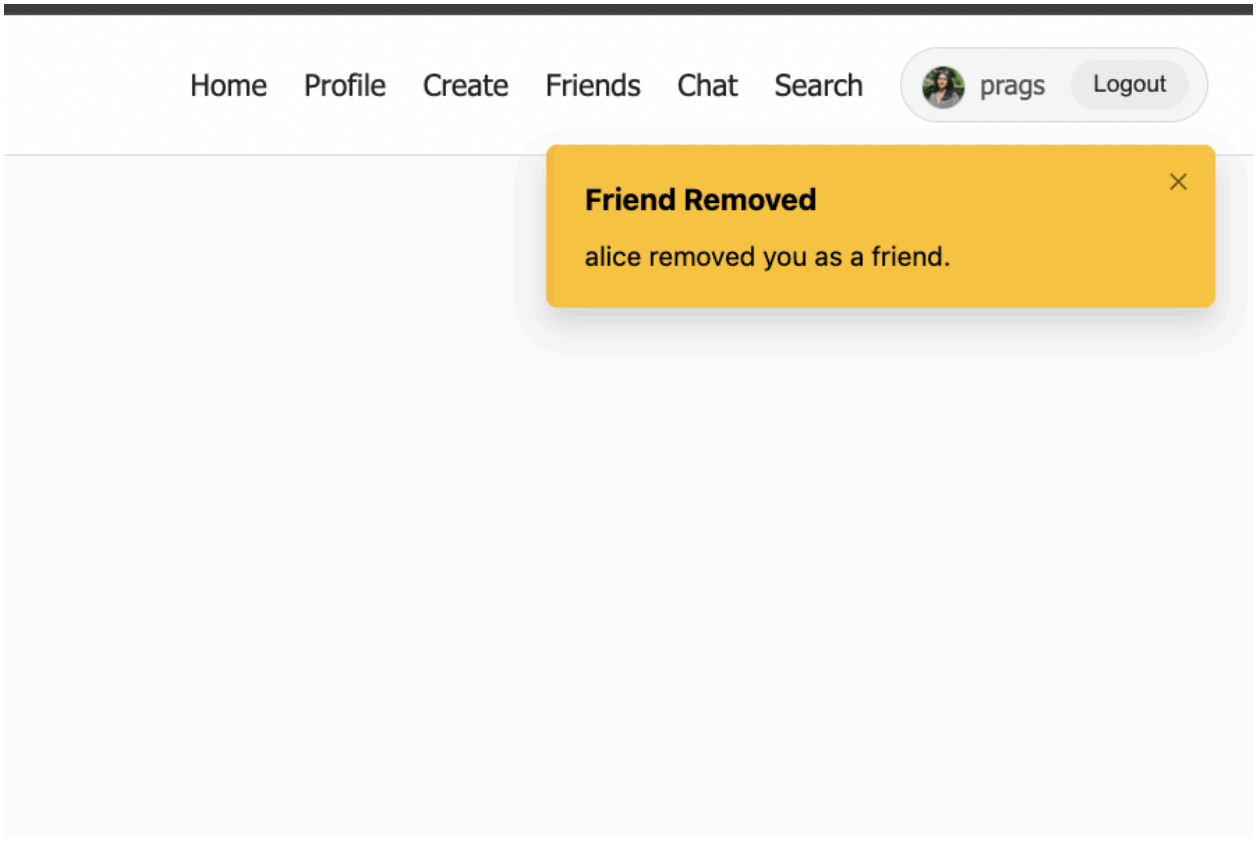



```
User 3 (charlie) sent friend request to 5
[Toast Service] Sending toast to user 5 (sockets: 1) {
  duration: 5000,
  viewText: 'View Requests',
  title: 'New Friend Request',
  content: 'You have received a friend request from charlie.',
  type: 'info',
  viewLink: '/friends'
}
```

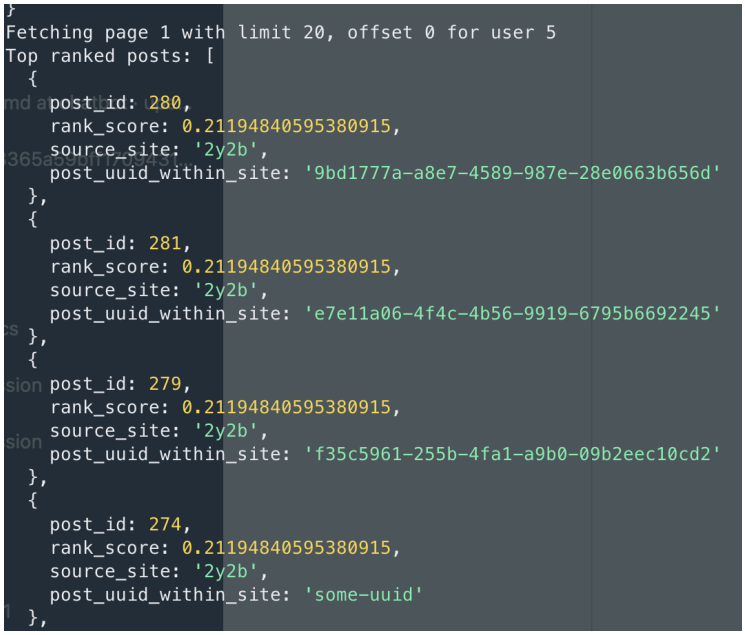
Push Notifications (Chat Message + Group Chats)



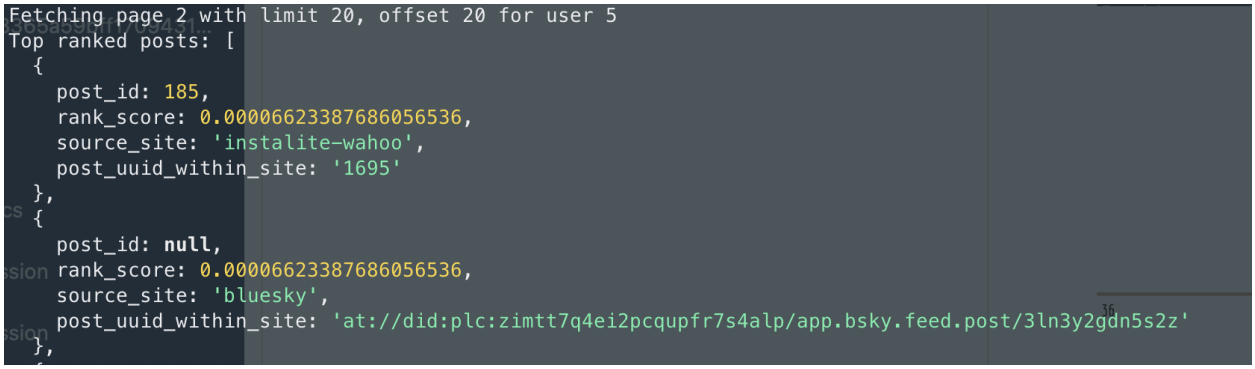

Friend Request Accepted
alice accepted your friend request!
View Profile


Home
Profile
Create
Friends
Chat
Search
prags
Logout
Friend Removed
alice removed you as a friend.

Ranking + Infinite Scroll

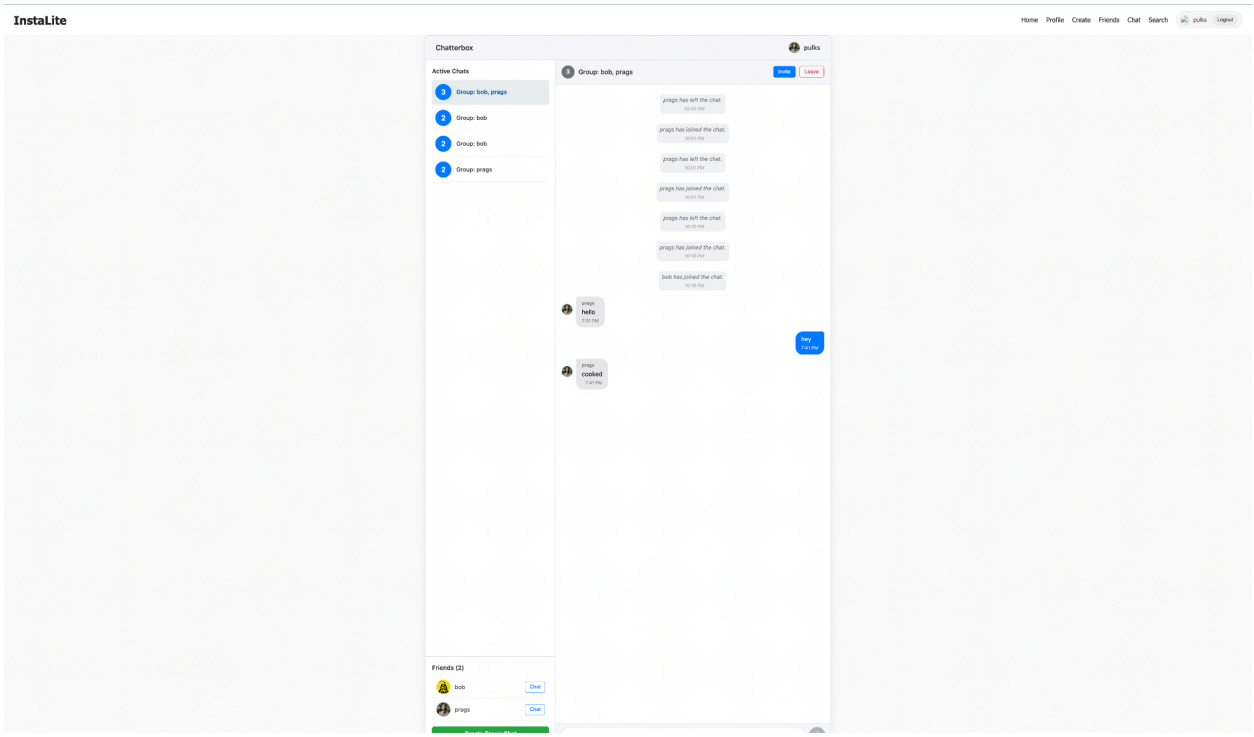


```
}
Fetching page 1 with limit 20, offset 0 for user 5
Top ranked posts: [
  {
    post_id: 280,
    rank_score: 0.21194840595380915,
    source_site: '2y2b',
    post_uuid_within_site: '9bd1777a-a8e7-4589-987e-28e0663b656d'
  },
  {
    post_id: 281,
    rank_score: 0.21194840595380915,
    source_site: '2y2b',
    post_uuid_within_site: 'e7e11a06-4f4c-4b56-9919-6795b6692245'
  },
  {
    post_id: 279,
    rank_score: 0.21194840595380915,
    source_site: '2y2b',
    post_uuid_within_site: 'f35c5961-255b-4fa1-a9b0-09b2eec10cd2'
  },
  {
    post_id: 274,
    rank_score: 0.21194840595380915,
    source_site: '2y2b',
    post_uuid_within_site: 'some-uuid'
  },
```

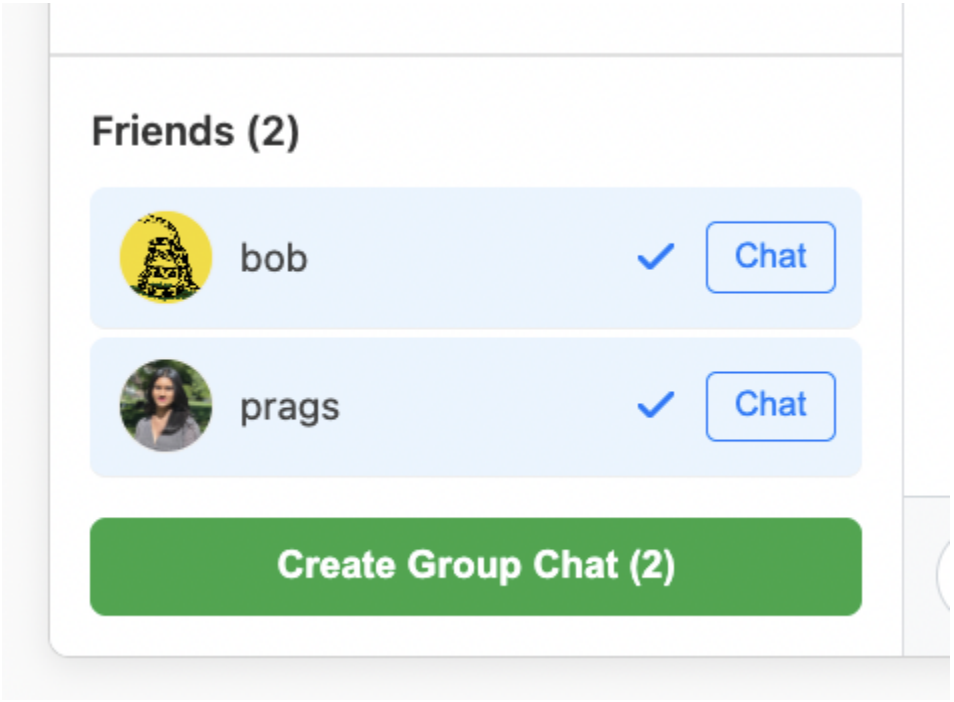


```
Fetching page 2 with limit 20, offset 20 for user 5
Top ranked posts: [
  {
    post_id: 185,
    rank_score: 0.00006623387686056536,
    source_site: 'instalite-wahoo',
    post_uuid_within_site: '1695'
  },
  {
    post_id: null,
    rank_score: 0.00006623387686056536,
    source_site: 'bluesky',
    post_uuid_within_site: 'at://did:plc:zimtt7q4ei2pcqupfr7s4alp/app.bsky.feed.post/3ln3y2gdn5s2z'
  },
```

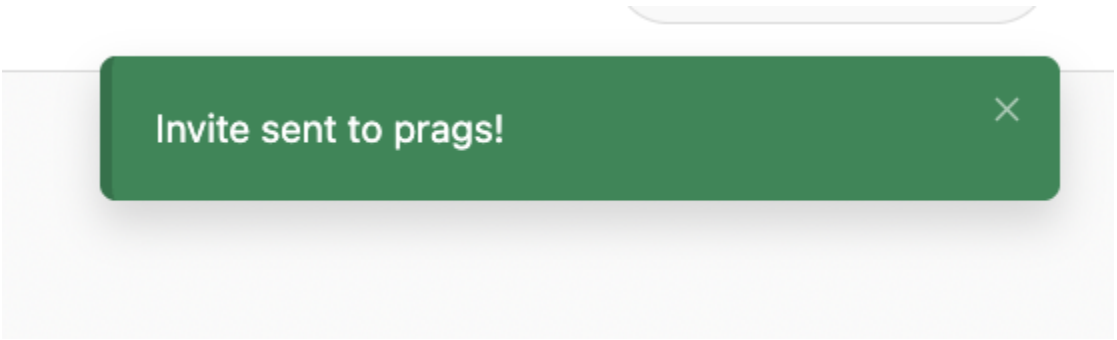
Group Chat

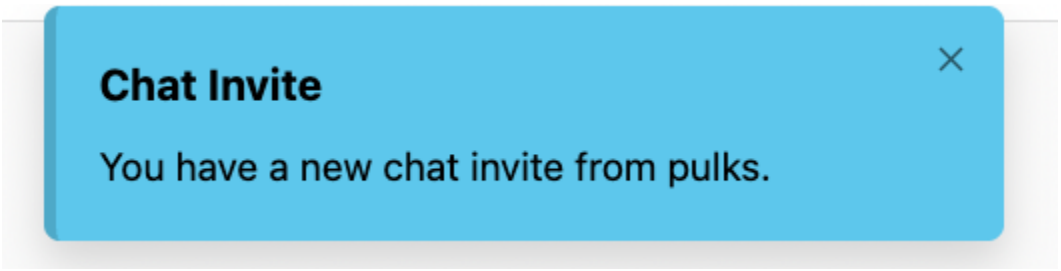

InstaLite
Home
Profile
Create
Friends
Chat
Search
pulks
Logout
Chatterbox
pulks
Active Chats
3
Group: bob, prags
2
Group: bob
2
Group: bob
2
Group: prags
3
Group: bob, prags
Invite
Leave
prags has left the chat.
prags has joined the chat.
prags has left the chat.
prags has joined the chat.
prags has left the chat.
prags has joined the chat.
bob has joined the chat.
prags
hello
hey
7:41 PM
prags
cooked
7:41 PM
Friends (2)
bob
Chat
prags
Chat

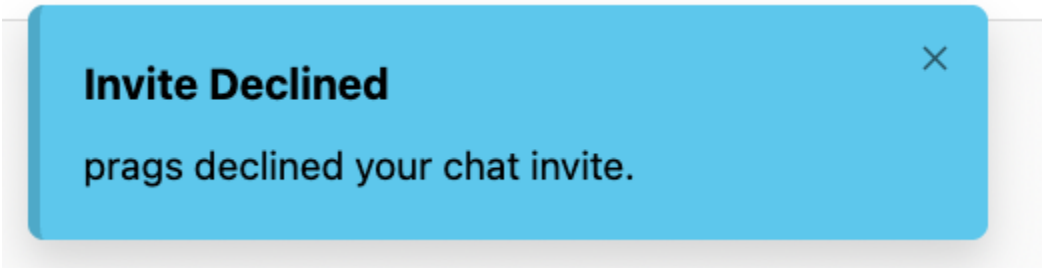
Group Chat Creation



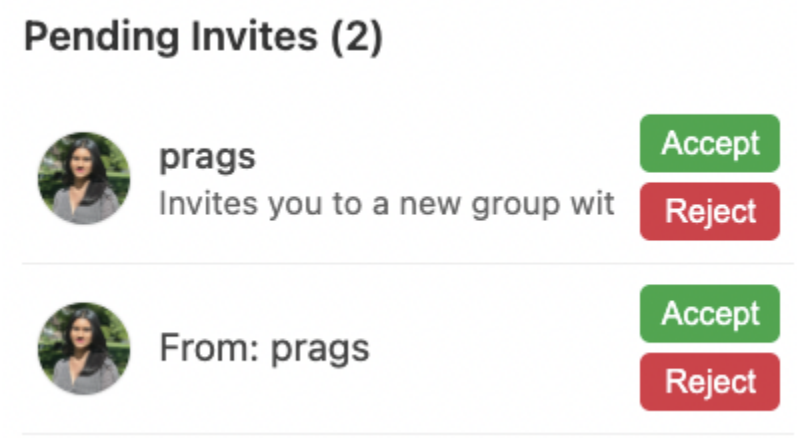
Invite Notifications



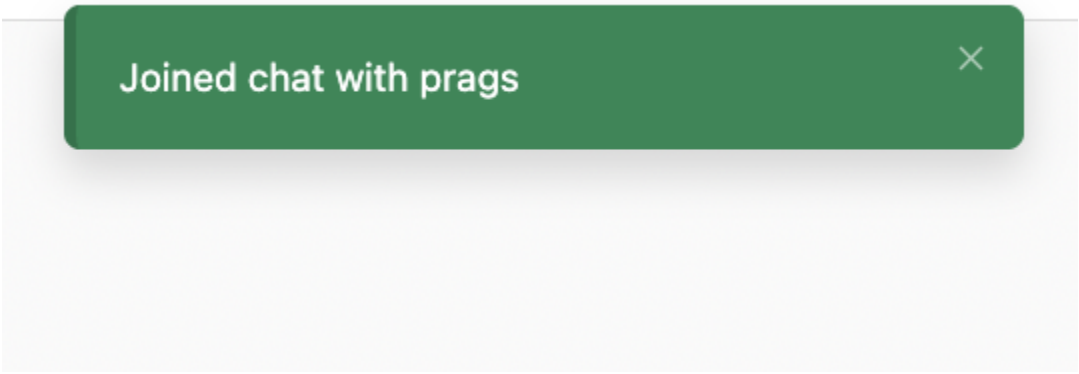




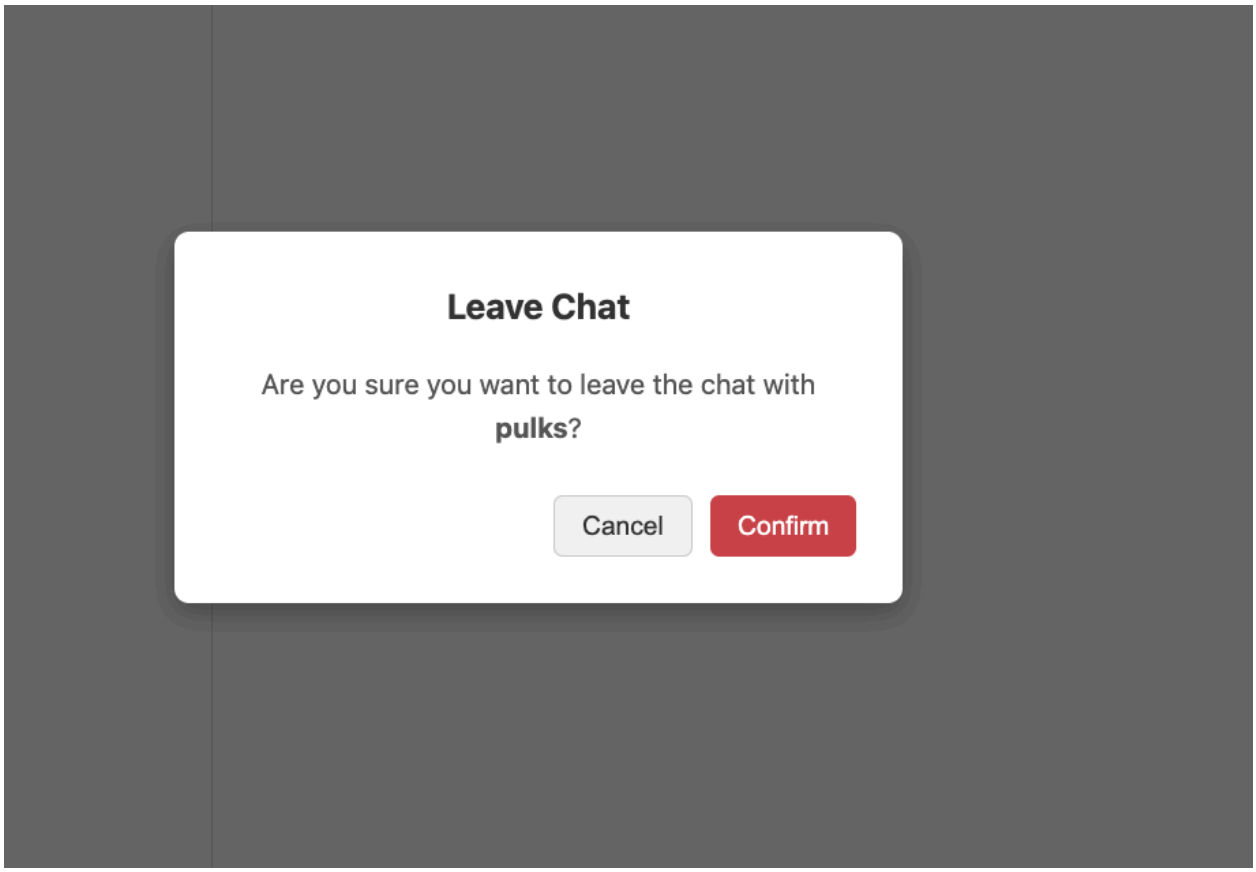
Invite Center



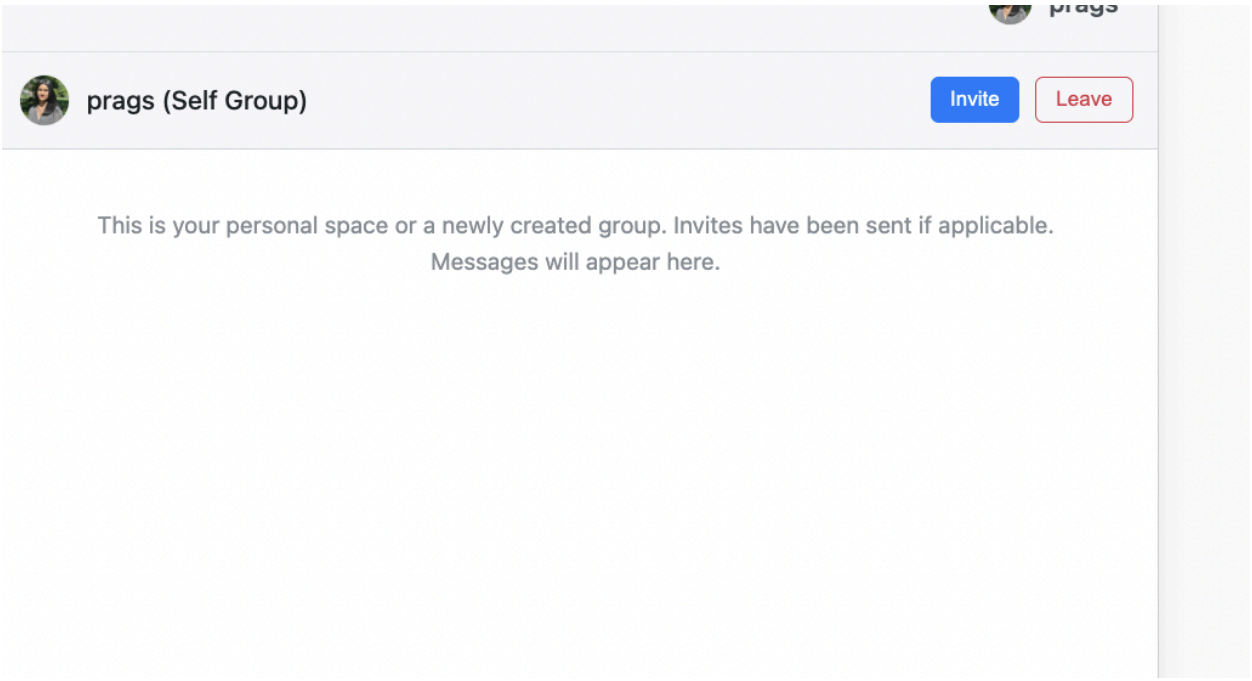
Accepted Invite



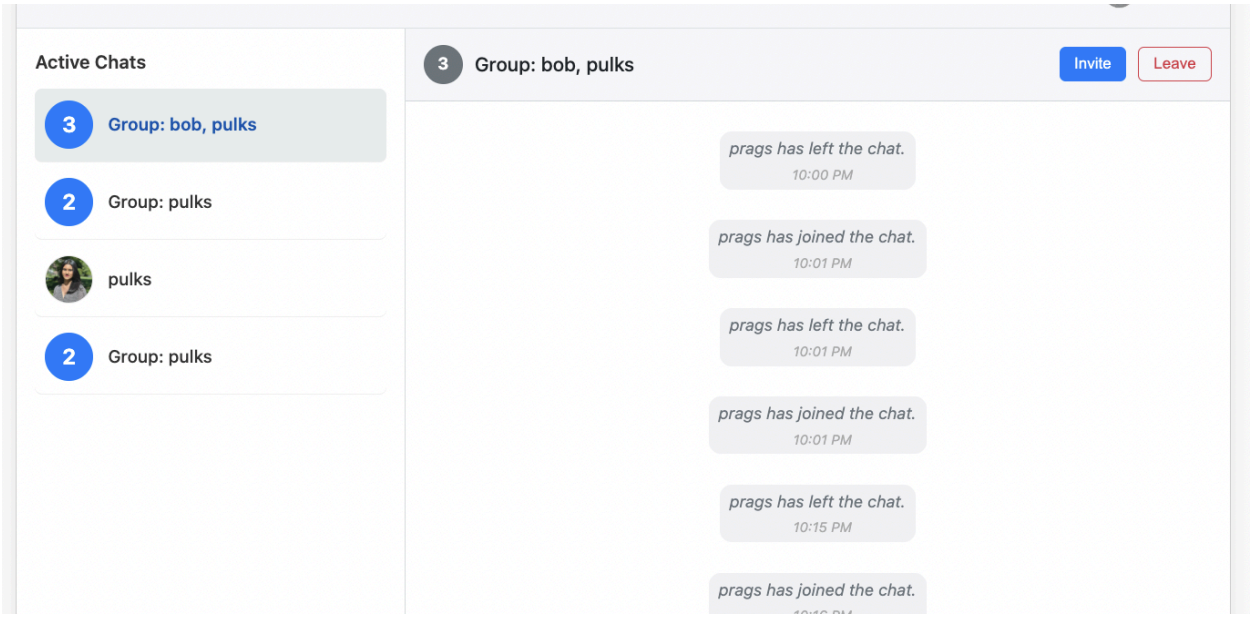
Leave Chat



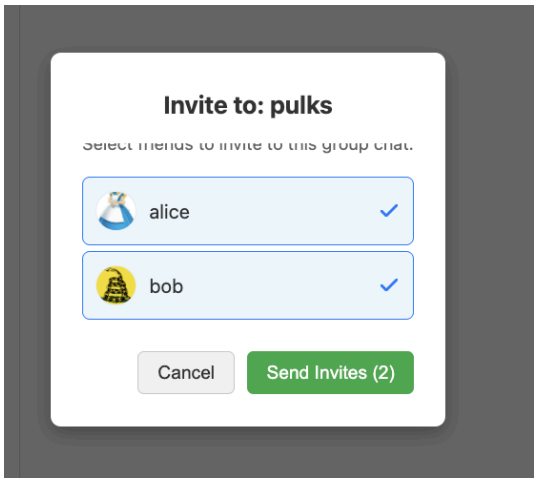
New Group Chat



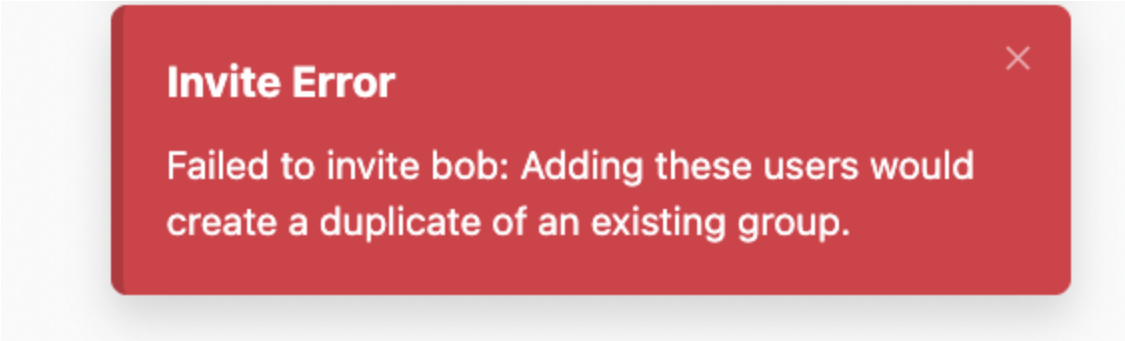
Active Chats



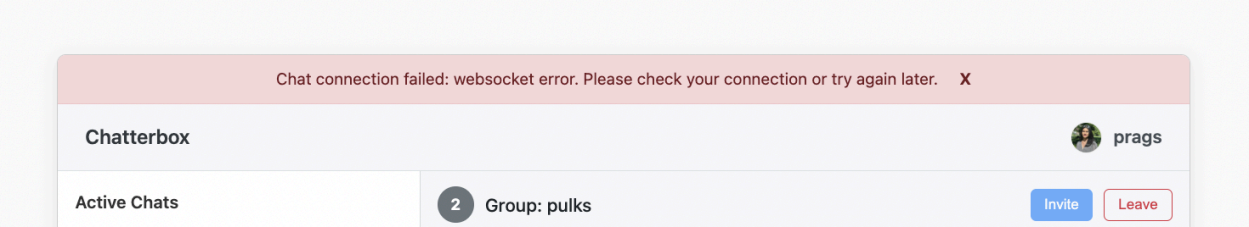
Invite to Existing Chat



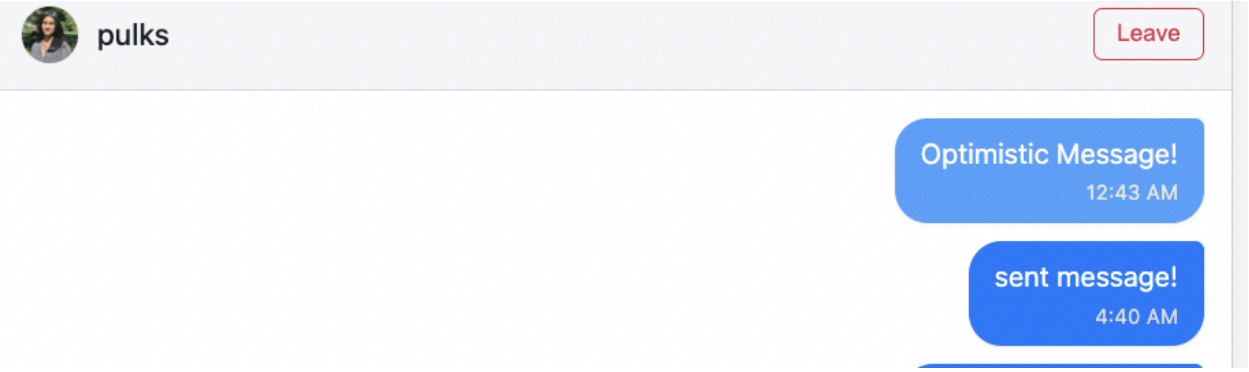
Duplicate Checking



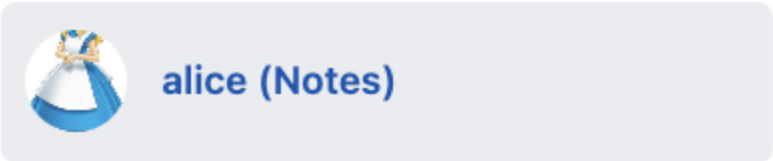
Auto-Reload Connection



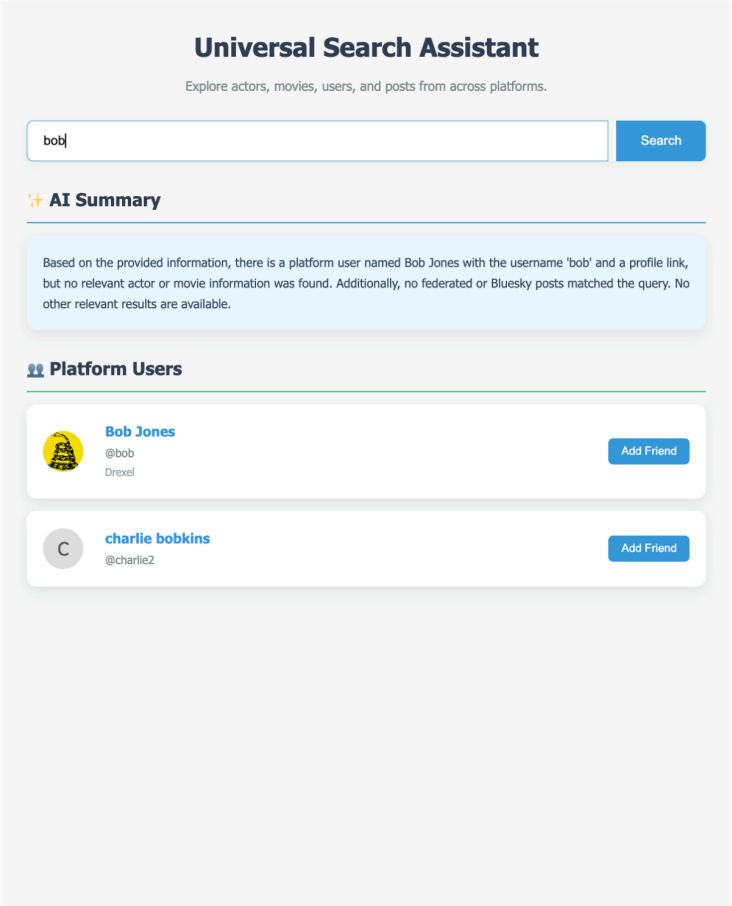
Optimistic Messaging



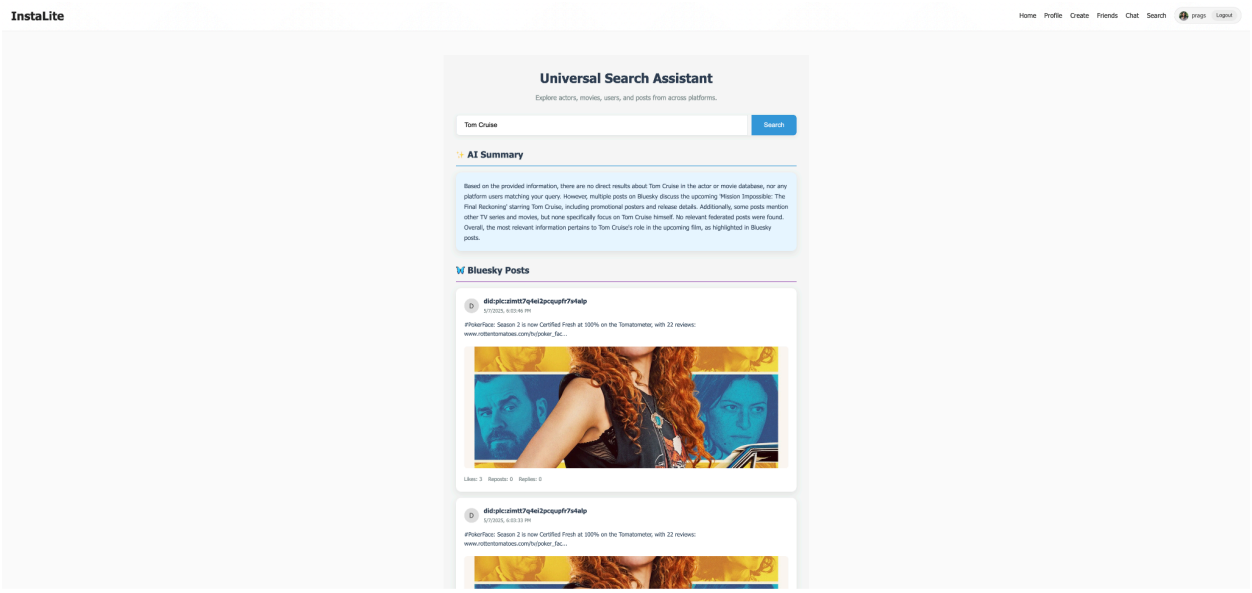
Self Group (Notes)



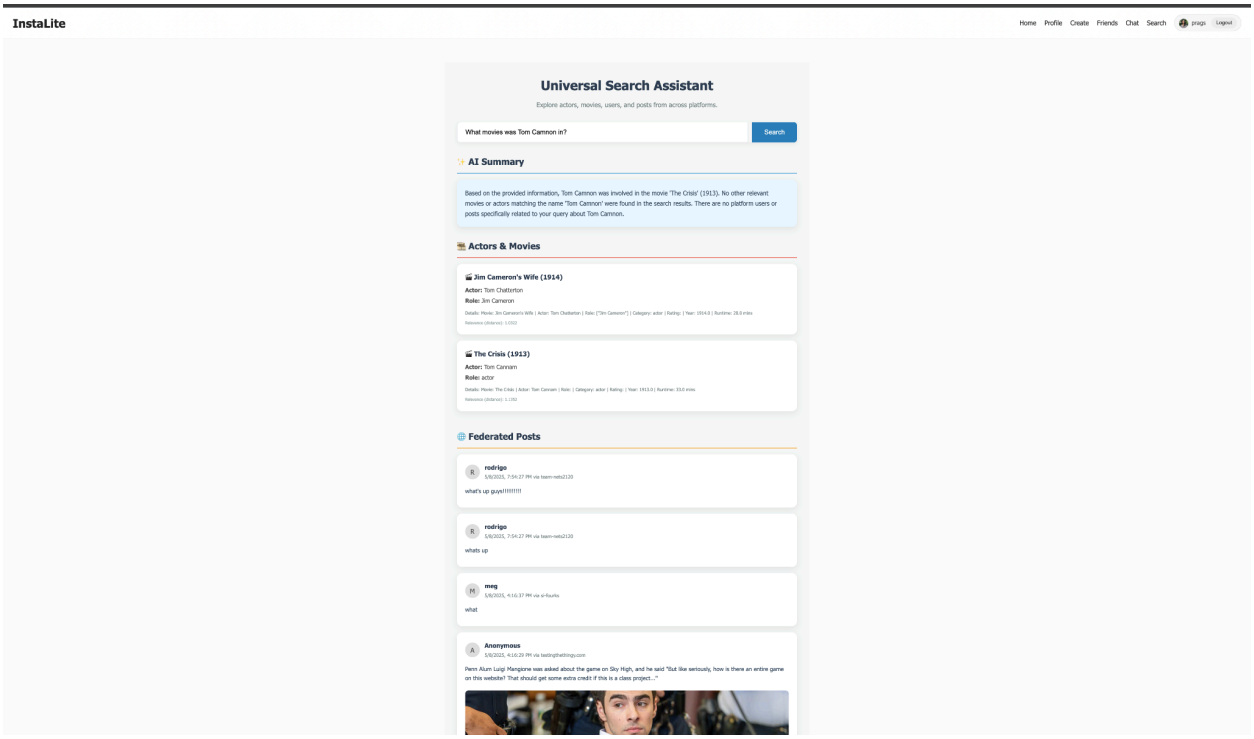
Search for User (with valid links) + Not sending irrelevant info + SQL queries from LM



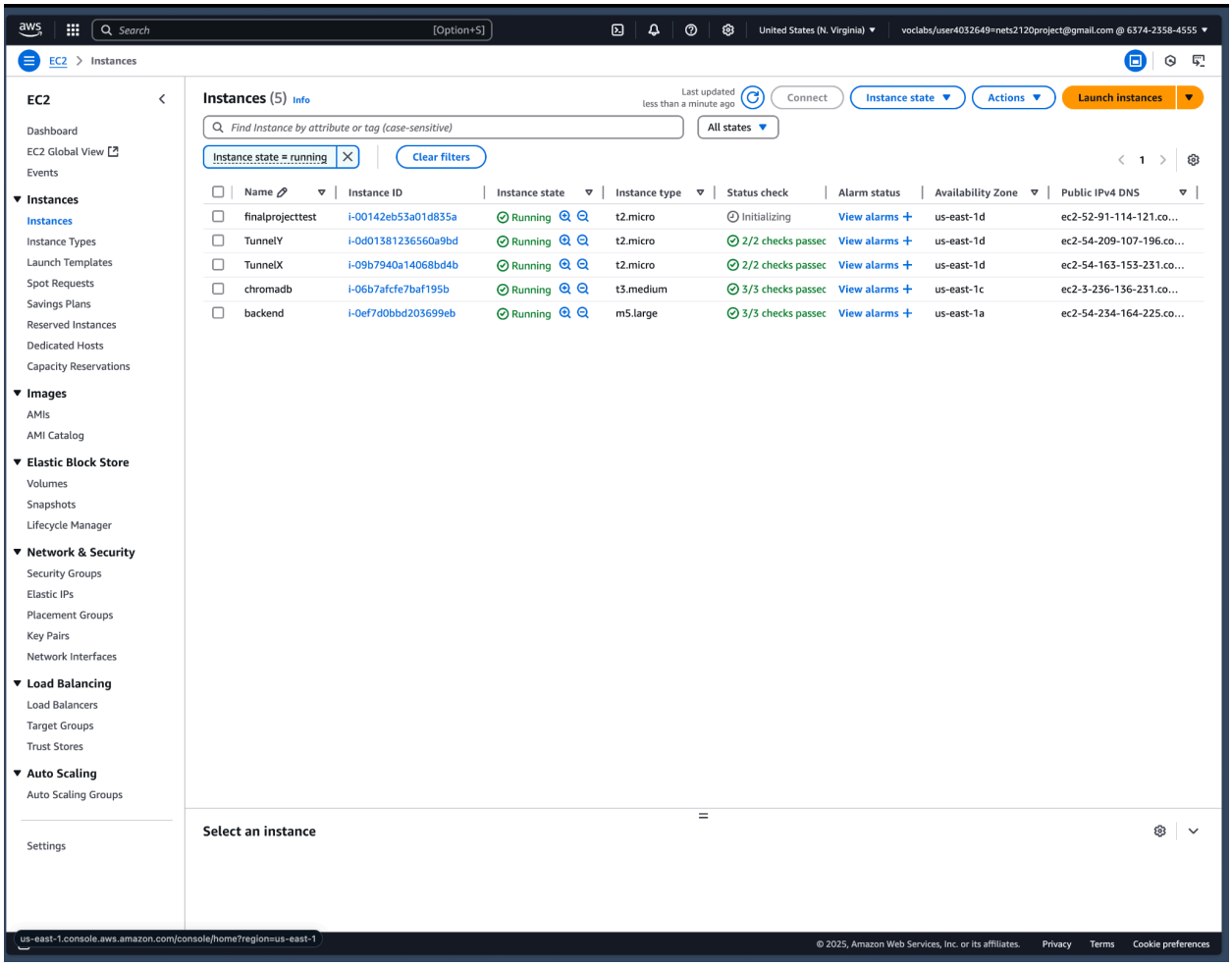
Grounding / Hallucinations



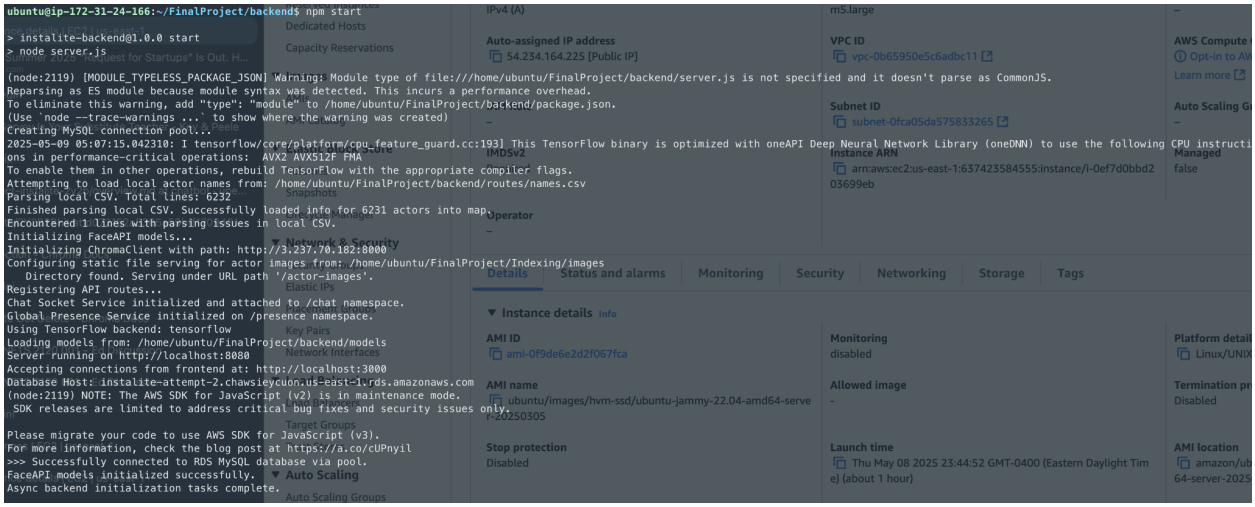
Searching for question / actors / movies + actor info + AI summary + posts (liberal SQL query so we can see some results)



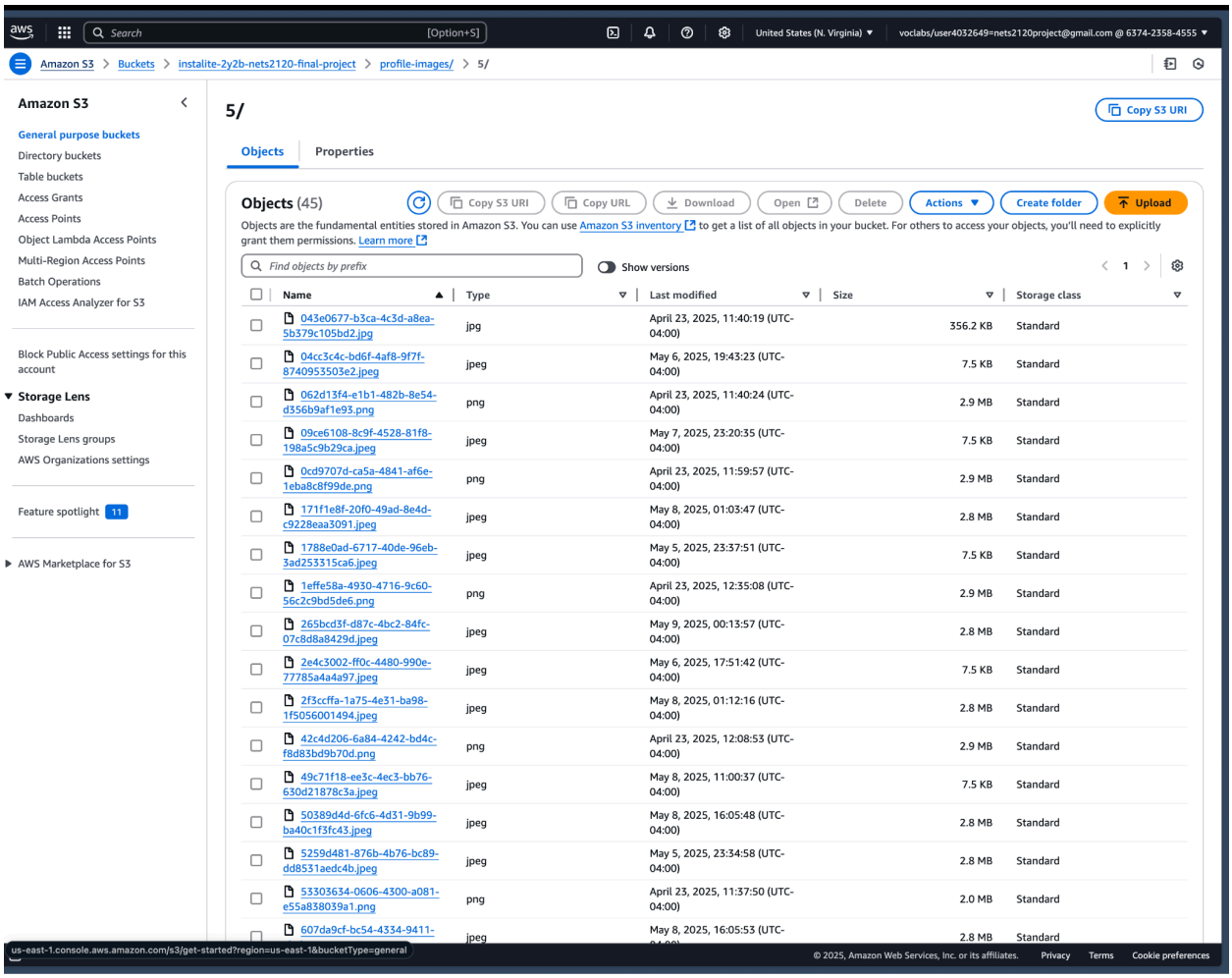
EC2 Instances (Chroma, Backend, Kafka)



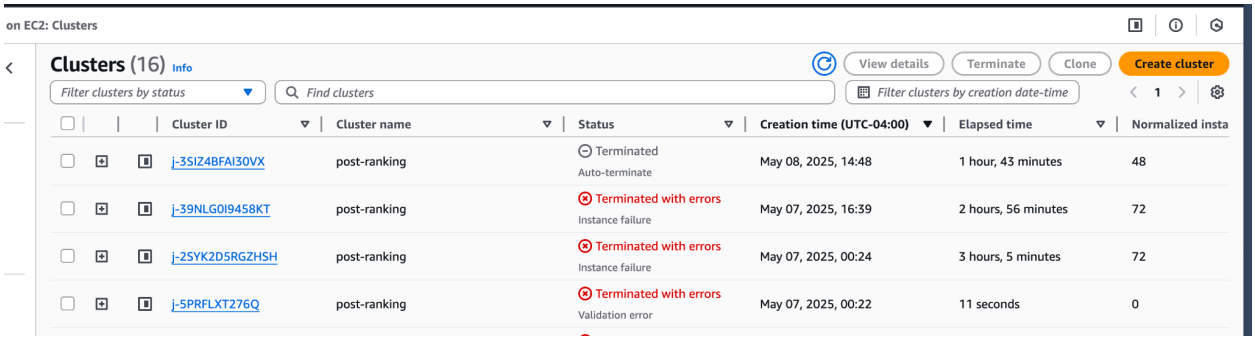
Chroma + Backend Hosted on AWS



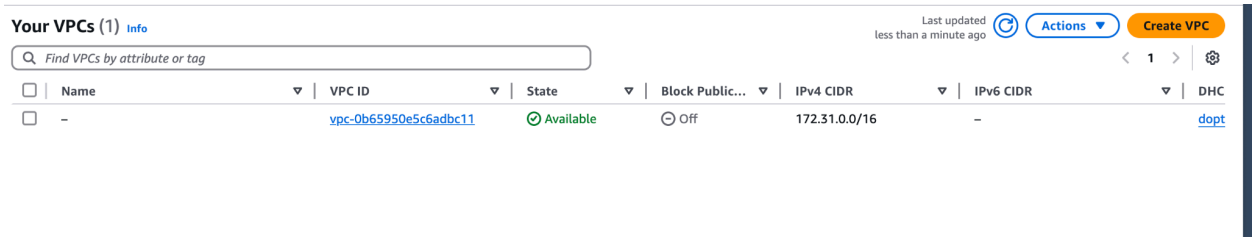
S3 Profile Pics / Images



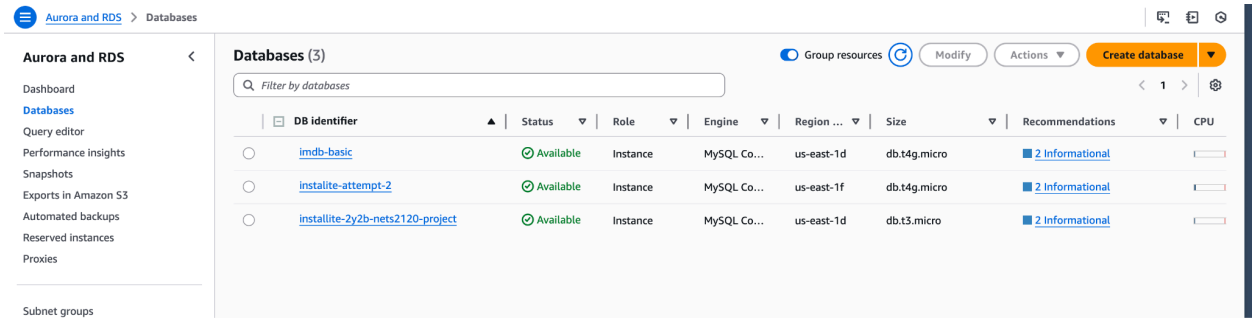
EMR Rankings



VPCs


Your VPCs (1) Info
Last updated less than a minute ago
Actions
Create VPC
Find VPCs by attribute or tag
1
Name
VPC ID
State
Block Public...
IPv4 CIDR
IPv6 CIDR
DHC
–
vpc-0b65950e5c6adbc11
Available
Off
172.31.0.0/16
–
dopt

RDS


Aurora and RDS
Databases
Aurora and RDS
Dashboard
Databases
Query editor
Performance insights
Snapshots
Exports in Amazon S3
Automated backups
Reserved instances
Proxies
Subnet groups
Databases (3)
Group resources
Modify
Actions
Create database
Filter by databases
1
DB identifier
Status
Role
Engine
Region ...
Size
Recommendations
CPU
imdb-basic
Available
Instance
MySQL Co...
us-east-1d
db.t4g.micro
2 Informational
instalite-attempt-2
Available
Instance
MySQL Co...
us-east-1f
db.t4g.micro
2 Informational
installite-2y2b-nets2120-project
Available
Instance
MySQL Co...
us-east-1d
db.t3.micro
2 Informational