

Social Computing Capstone

Algorithmic Feed Curation

CSE 481p | Spring 2023

Kevin Feng

PhD Student | University of Washington, Human Centered Design & Engineering

Schedule for today's class

- Lecture on today's topic (15 min)
- Video + posters overview (10 min)
- Poster work time (55 min)

Back in 2006...



facebook

Welcome Matt!

home search browse share invite help logout

Q Search

My Profile edit

My Friends

My Photos

My Notes

My Groups

My Events

My Messages

My Account

My Privacy

News Feed



Sponsored: iTunes is the Shit! 4:00pm



Boy howdy it is! I thought it was so damn cool i coulndtfd fdafdaf dfafdfa feeidken eidhtoen djierfnf idfjeif



Athalie Laguerre and Meredith Chin commented on the note tab energy: an anomoly in my life. 3:59pm



Carrie Peterson joined the group Marvel: Ultimate Alliance - The World's Largest Army of Super Heroes. 3:39pm



Payam Imani added new photos. 3:30pm

Share Save



Gotham City: Chicago - 58 photos

by Payam Imani

Location: Chicago, IL

In this album: Payam Imani

Requests



1 group invitation

My Status edit



Keep your friends updated on your current status.

Shared with You see all



ShowBizSpy - Movies
From Eddie Lim



Microsoft launches the Zune! - Engadget
From Soleio



Drew Hamlin
From Soleio

Birthdays see all

Today's Birthdays

Kyle Foote

October 7th Birthdays

Joe Silberschmidt

Alisha Roeder

Users revolted. Why?

A Day Without Facebook

A call for Facebook users to boycott Facebook on September 12, 2006

Why take this day-off?

As Facebook users we are almost universally against the new Feeds, and yet the response from Facebook has been to completely ignore our complaints, and in fact, in one response “Pete” our friendly customer service representative is actually boasting about some of the most complained about features. There are over 350 anti-Feed groups on facebook now, and less than 5 in favor of the development.

Clearly the Facebook organization is not listening.

Who should take the day off of Facebook?

Everyone! High Schoolers, College Students, Professionals, even our newly invited Politicians should take the day off Facebook!

What does a day without Facebook accomplish?

It is becoming blatantly apparent that the powers that run Facebook are no longer in it for the community or the users. While we have all appreciated Facebook, it is not a necessary part of our lives. And it is not the only way we can keep track of our friends. Think of the previous social networking sites that were hot for a time and eventually were replaced. Facebook is no different than Orkut or Friendster, it can be replaced.

Do we want to replace Facebook? No, but it would be nice to have the organization be responsive to the concerns of the vast majority of its users.

<http://daywithoutfacebook.blogspot.com/>

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A Day Without Facebook

been to completely ignore our complaints, and in fact, in one
es. There are over 350 anti-Feed groups on facebook now, and

Wh It damages what privacy was left on Facebook. Before Feeds, it was already easy enough to stalk anyone at your school, and everyone on your friends list; but with the advent of Feeds, it is now nearly impossible not to be “stalked” or to “stalk”

Who should take the day off of Facebook?

Every
What There are other reasons users are complaining, ranging from the fact it takes away the time-wasting aspect of Facebook to aesthetic complaints about the new look.

It is b
And it
Friendster, it can be replaced.

Do we want to replace Facebook? No, but it would be nice to have the organization be responsive to the concerns of the vast majority of its users.

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Facebook responds



An Open Letter from Mark Zuckerberg:

An Open Letter from Mark Zuckerberg:



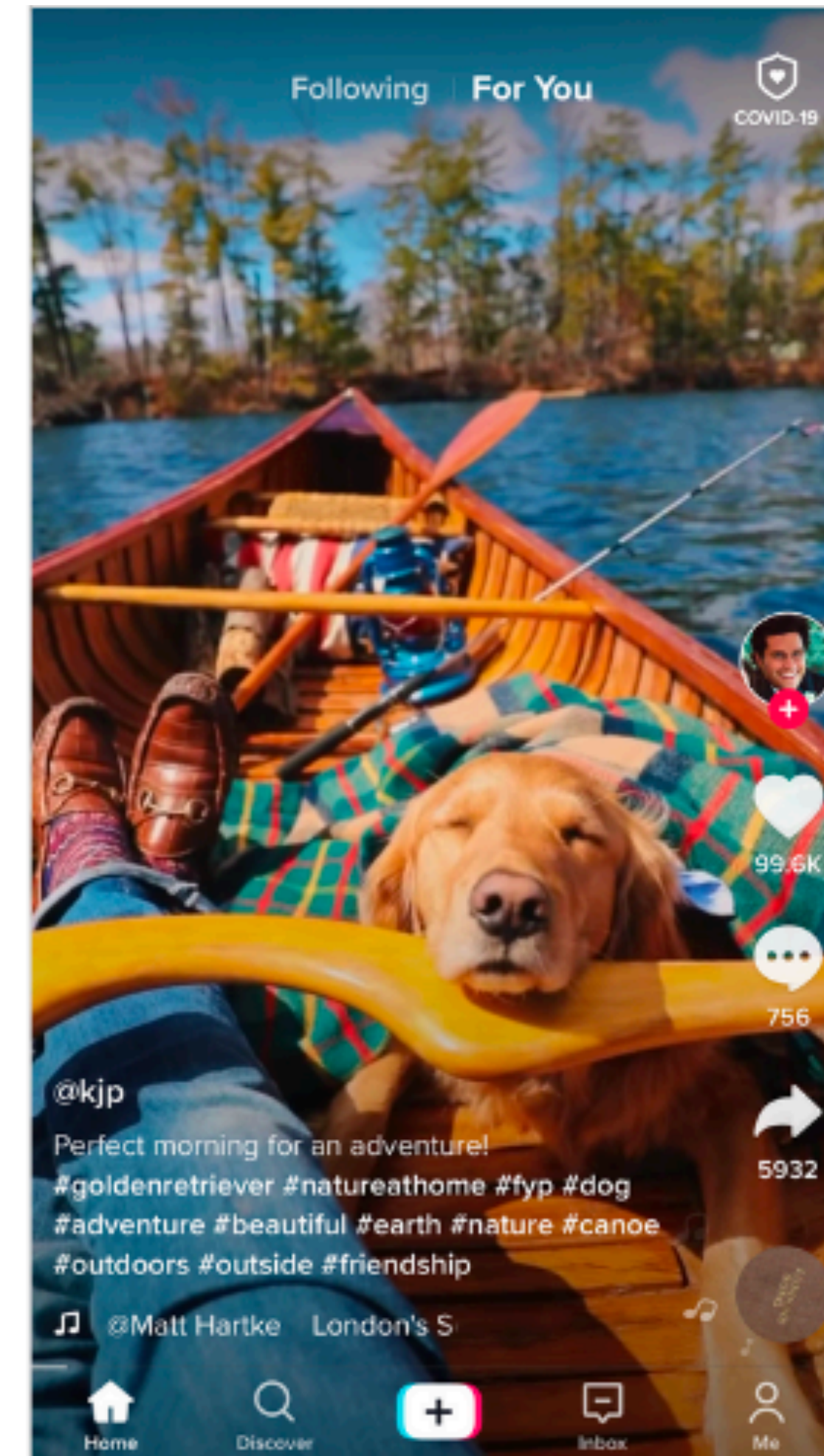
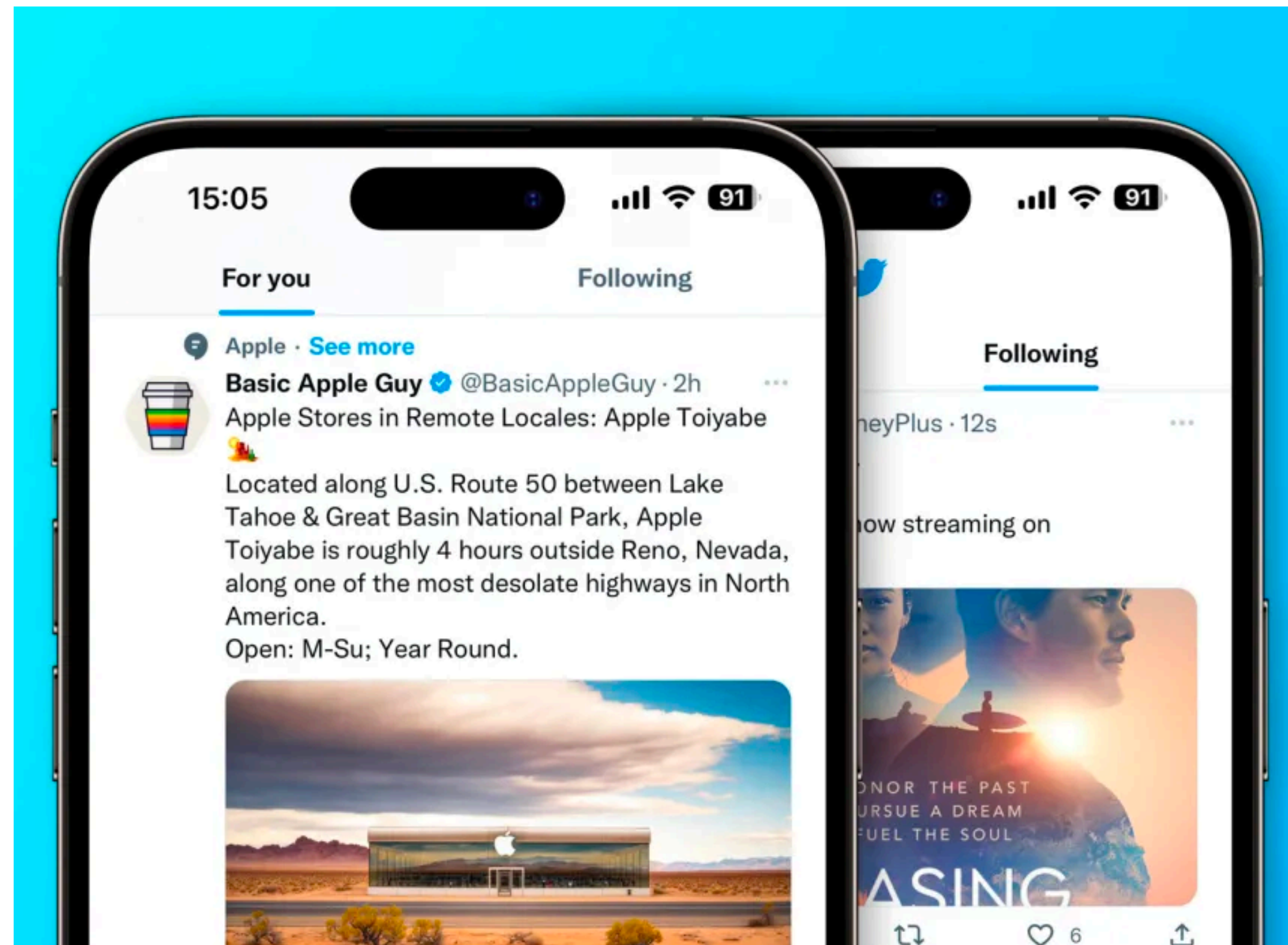
We really messed this one up. When we launched News Feed and Mini-Feed we were trying to provide you with a stream of information about your social world. Instead, we did a bad job of explaining what the new features were and an even worse job of giving you control of them. I'd like to try to correct those errors now.

When I made Facebook two years ago my goal was to help people understand what was going on in their world a little better. I wanted to create an environment where people could share whatever information they wanted, but also have control over whom they shared that information with. I think a lot of the success we've seen is because of these basic principles.

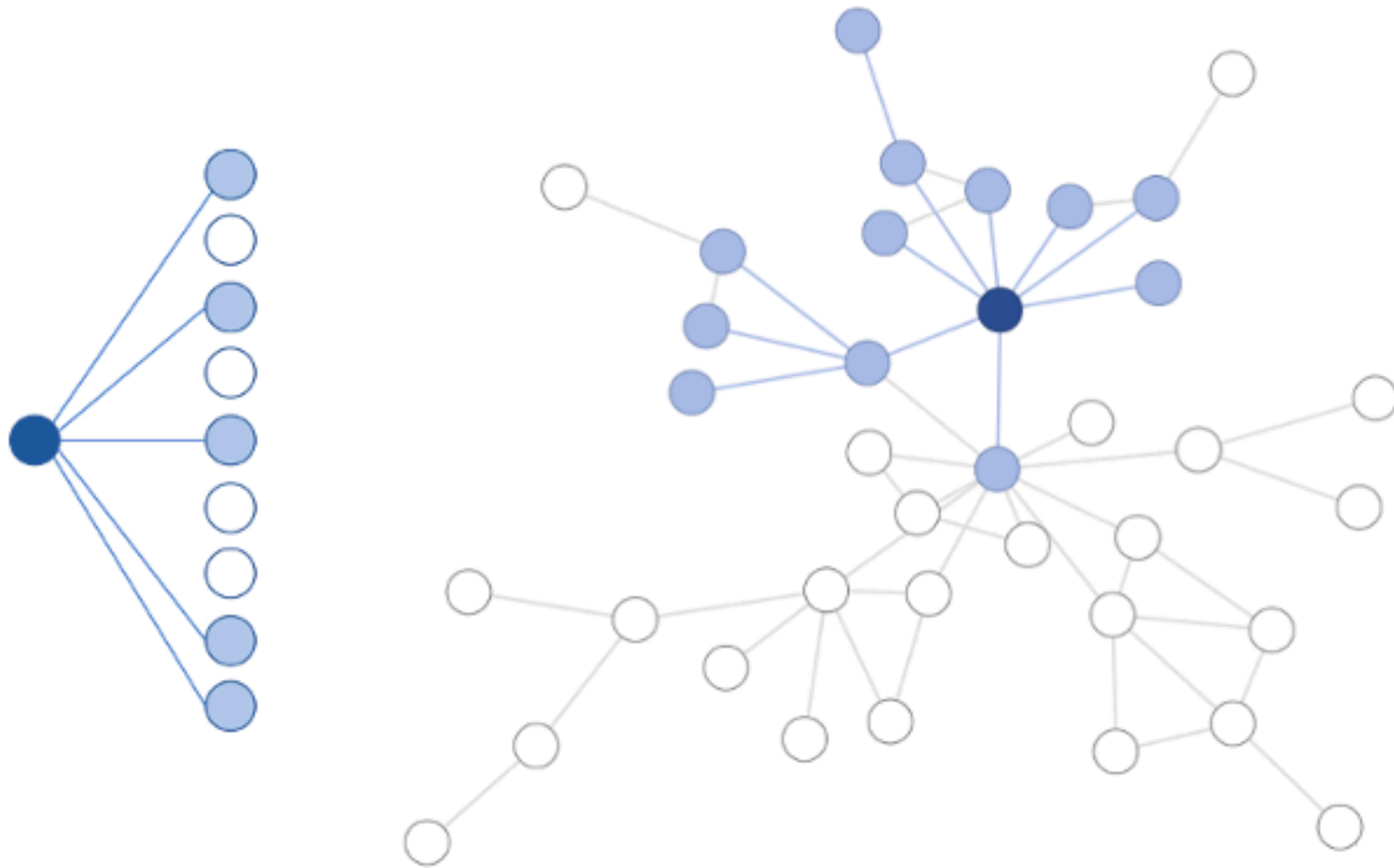
We made the site so that all of our members are a part of smaller networks like schools, companies or regions, so you can only see the profiles of people who are in your networks and your friends. We did this to make sure you could share information with the people you care about. This is the same reason we have built extensive [privacy settings](#) — to give you even more control over who you share your information with.

Somehow we missed this point with News Feed and Mini-Feed and we didn't build in the proper privacy controls right away. This was a big mistake on our part, and I'm sorry for it. But apologizing isn't enough. I wanted to make sure we did something about it, and quickly. So we have been coding nonstop for two days to get you [better privacy controls](#). [This new privacy page will allow you to choose which types of stories go into your Mini-Feed and your friends' News Feeds](#), and it also lists the type of actions Facebook will never let any other person know about. If you have more comments, please send them over.

Feeds have changed...a lot

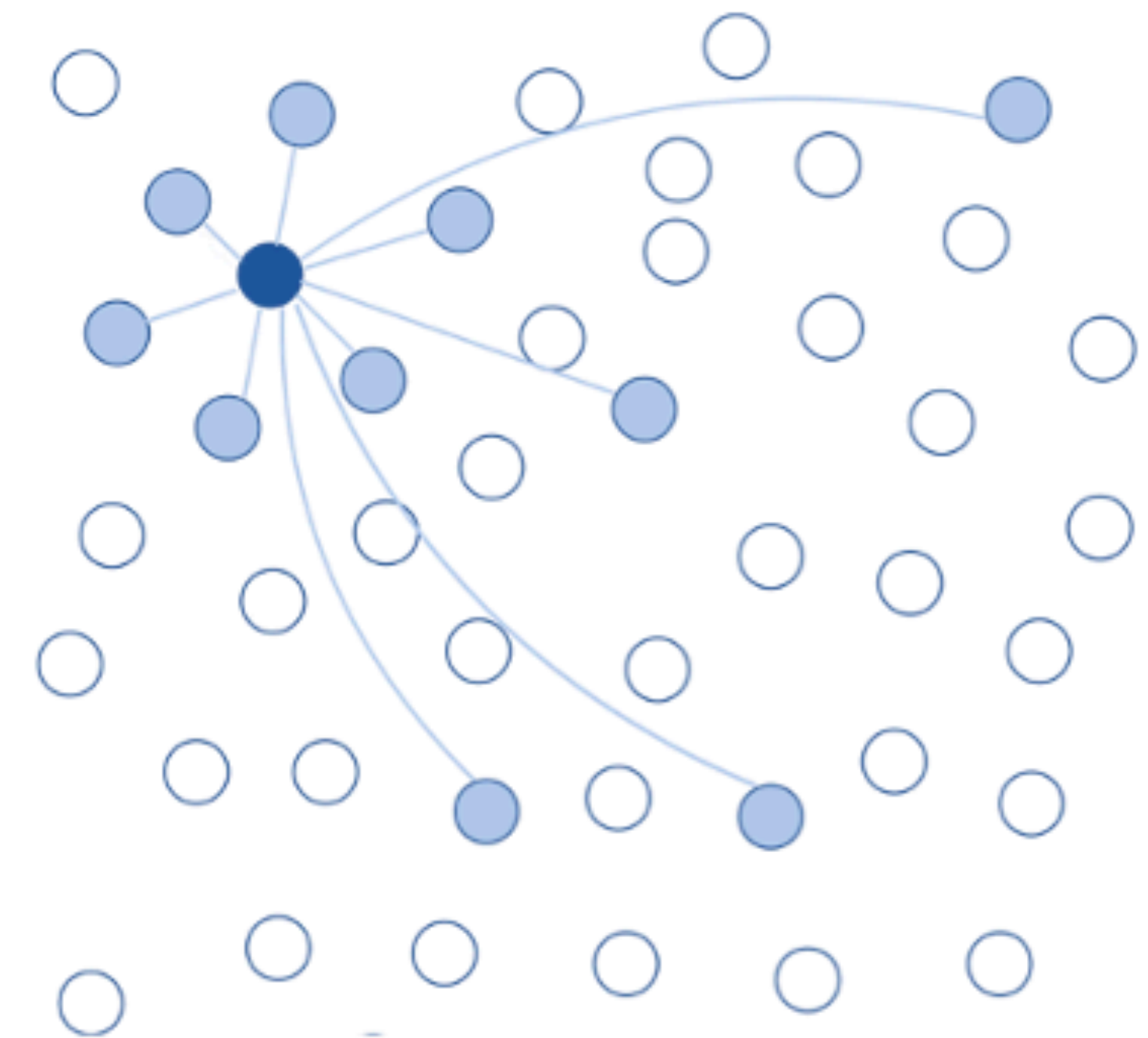


Subscription, network, algorithm



Subscription

Network



Algorithm

Algorithmic folk theories

Folk theories: *informal conceptualizations* about the world, often developed through *empirical experience*.

Curation and Algorithms

#chi4good, CHI 2016, San Jose, CA, USA



First I “like” it, then I hide it: Folk Theories of Social Feeds

Motahhare Eslami, Karrie Karahalios, Christian Sandvig[†], Kristen Vaccaro

Aimee Rickman[‡], Kevin Hamilton, Alex Kirlik

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[†]csandvig@umich.edu, [‡]arickman@csufresno.edu

HCI and Collective Action

CHI 2017, May 6–11, 2017, Denver, CO, USA



“Algorithms ruin everything”: #RIPTwitter, Folk Theories, and Resistance to Algorithmic Change in Social Media

Michael A. DeVito

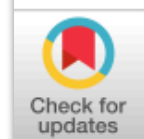
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Algorithmic Folk Theories and Identity: How TikTok Users Co-Produce Knowledge of Identity and Engage in Algorithmic Resistance

NADIA KARIZAT, University of Michigan, USA

DANIEL DELMONACO, University of Michigan, USA

MOTAHHARE ESLAMI, Carnegie Mellon University, USA

NAZANIN ANDALIBI, University of Michigan, USA



When Users Control the Algorithms: Values Expressed in Practices on the Twitter Platform

JENNA BURRELL, School of Information, University of California, Berkeley, USA

ZOE KAHN, School of Information, University of California, Berkeley, USA

ANNE JONAS, School of Information, University of California, Berkeley, USA

DANIEL GRIFFIN, School of Information, University of California, Berkeley, USA

What actually happens? (FB)

2010: EdgeRank

`priority(user, item) = affinity(user, poster) * Weight[item.type] / item.age`

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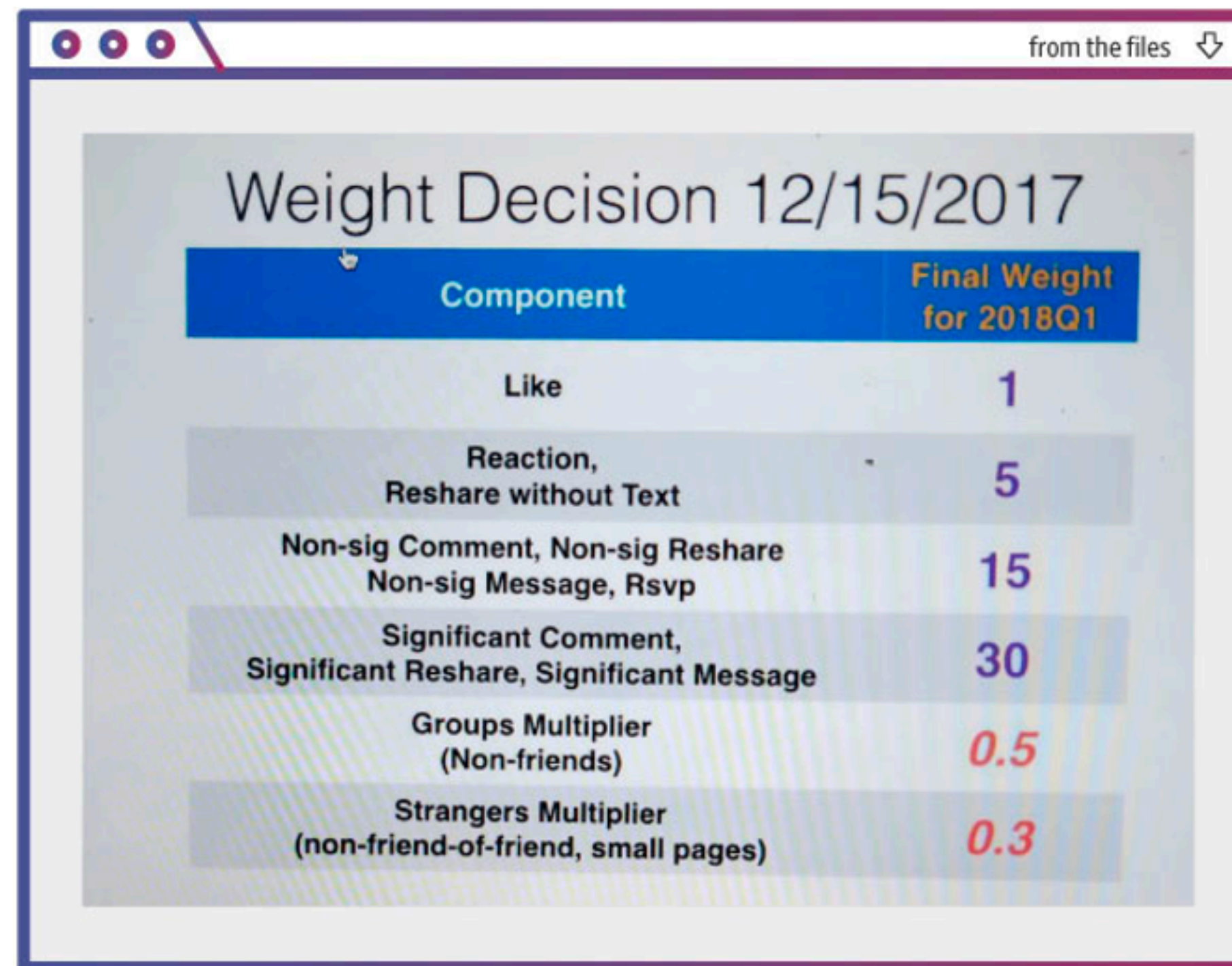
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What actually happens? (FB)

2010: EdgeRank

$\text{priority}(\text{user}, \text{item}) = \text{affinity}(\text{user}, \text{poster}) * \text{Weight}[\text{item.type}] / \text{item.age}$



The image is a screenshot of a document titled "Weight Decision 12/15/2017". It contains a table with two columns: "Component" and "Final Weight for 2018Q1". The table lists various components and their corresponding weights. The weights are color-coded: blue for base weights, purple for intermediate weights, and red for multipliers. The components are listed in descending order of weight.

Component	Final Weight for 2018Q1
Like	1
Reaction, Reshare without Text	5
Non-sig Comment, Non-sig Reshare Non-sig Message, Rsvp	15
Significant Comment, Significant Reshare, Significant Message	30
Groups Multiplier (Non-friends)	0.5
Strangers Multiplier (non-friend-of-friend, small pages)	0.3

Source: December 2017 internal Facebook memo

What actually happens? (FB)

2010: EdgeRank

$$\text{priority}(\text{user}, \text{item}) = \text{affinity}(\text{user}, \text{poster}) * \text{Weight}[\text{item.type}] / \text{item.age}$$

2018: Meaningful Social Interactions (MSI)

$$\text{MSI}(\text{user}, \text{item}) = \text{affinity}(\text{user}, \text{poster}) * \sum_{\text{int-type}} \text{P}(\text{user}, \text{item}, \text{int-type}) * \text{Weight}[\text{int-type}]$$

What actually happens? (FB)

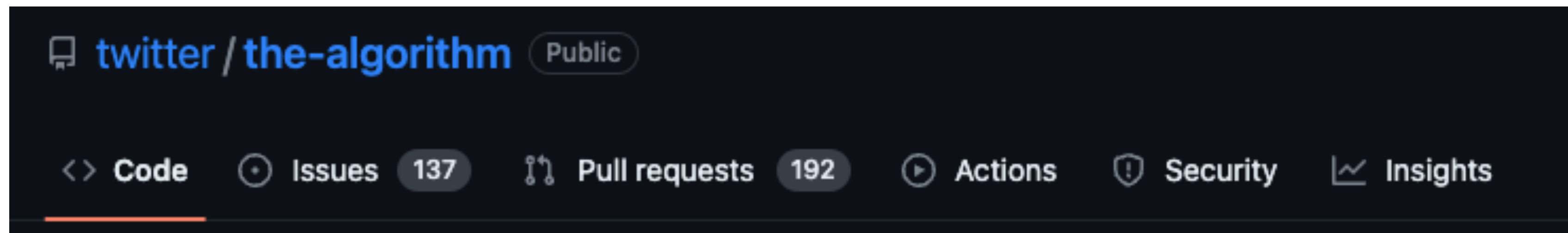
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`MSI(user, item) = affinity(user, poster) *
 $\sum_{\text{int-type}} P(\text{user, item, int-type}) * \text{Weight}[\text{int-type}]$`

What actually happens? (Twitter)


$$\text{score} = \sum_i \{ (\text{weight of engagement } i) * (\text{probability of engagement } i) \}$$

What actually happens? (Twitter)

Type of engagement	Weight
Probability the user will like the tweet	0.5
Probability the user will retweet the tweet	1.0
Probability the user replies to the tweet	13.5
Probability the user opens the tweet author profile and likes or replies to a tweet	12.0
Probability (for a video tweet) that the user will watch at least half of the video	0.005
Probability the user replies to the tweet and this reply is engaged by the tweet author	75.0
Probability the user will click into the conversation of this tweet and reply or like a tweet	11.0
Probability the user will click into the conversation and stay there for at least 2 minutes	10.0
Probability the user will react negatively (requesting “show less often” on the tweet or author, block or mute the tweet author)	-74.0
Probability the user will click report tweet	-369.0

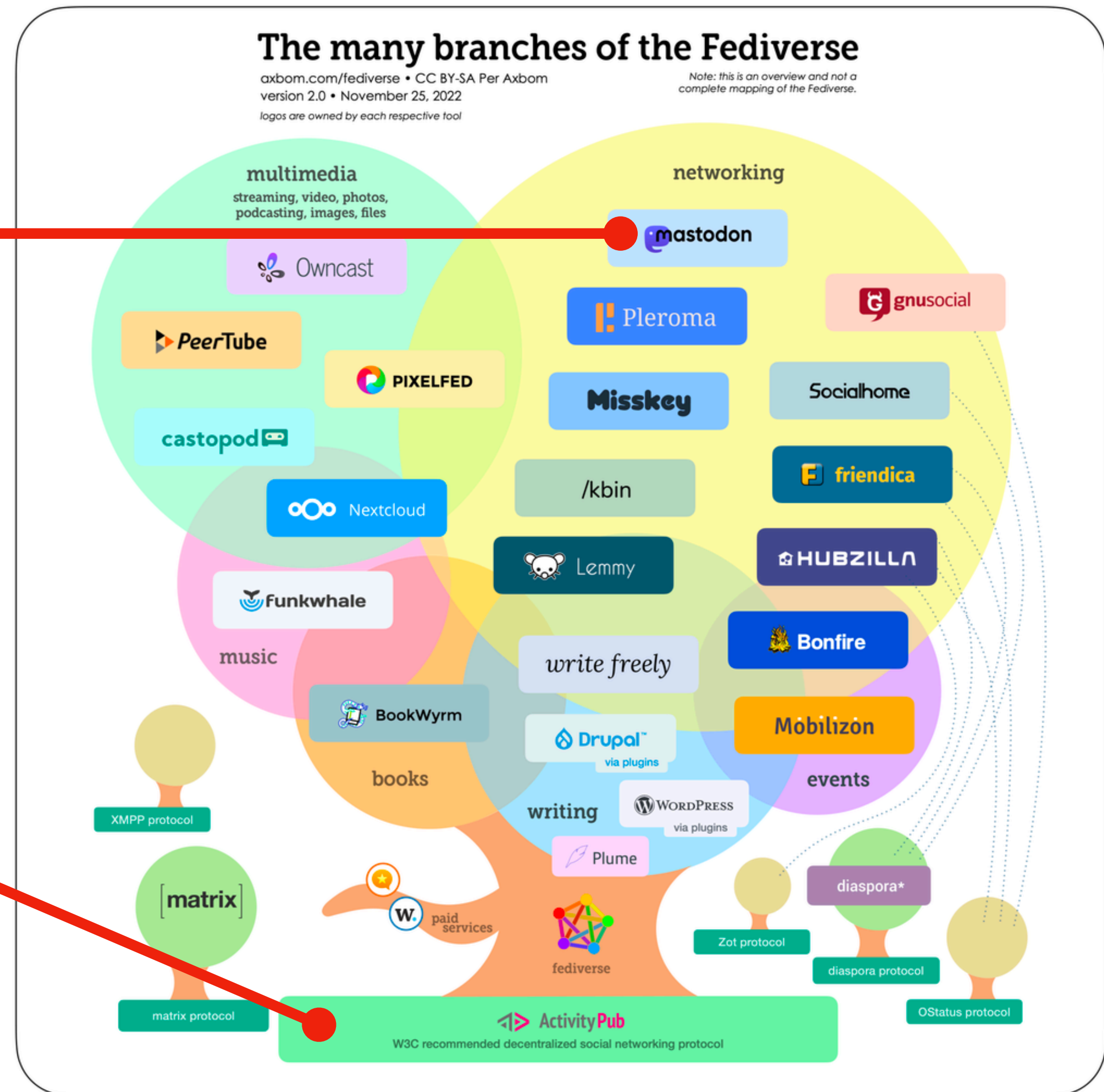
Formulas have consequences

$$\text{MSI}(\text{user}, \text{item}) = \text{affinity}(\text{user}, \text{poster}) * \sum_{\text{int-type}} \text{P}(\text{user}, \text{item}, \text{int-type}) * \text{Weight}[\text{int-type}]$$

- Users will first see content with high P and high Weight
- Content that is viral and “sensational” fits this bill
- These are also types of content that are likely to contain misinformation and other harmful content
- But it also makes the platform owners \$\$\$!

Alternatives to centralization

Alternatives to centralization



Federated protocols enable...

- Decentralized yet interconnected servers
- Communities to fully customize their moderation policies
- Developers to users to experiment with new interfaces

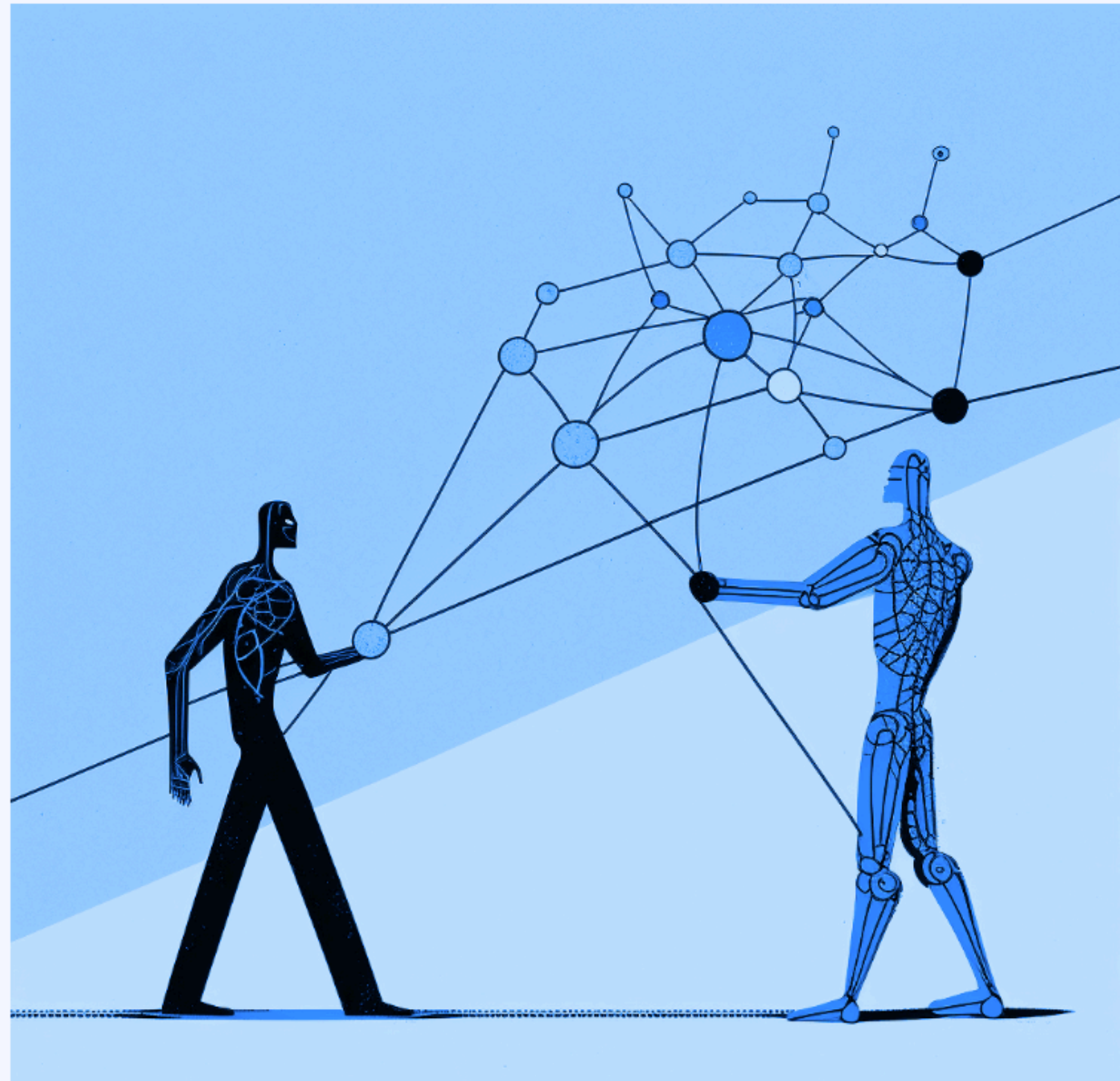
Bluesky's Composable Moderation

Blog > Composable Moderation

Composable Moderation

April 13, 2023

by Jay Graber



- Anyone can define and apply “community labels” to content or accounts (i.e. “spam”, “cats”)
- Servers have a default filter set by admins as high-level, automated moderation
- Users can then create and/or subscribe to community labels to customize their own experience

...but many open questions remain

- How do users choose a server?
- Who is legally responsible for content on a server?
- What's going happen with all of these different protocols?
 - Today's internet protocols (TCP/IP) were forced to unite under a common suite by the government, but it's hard to imagine the same happening for social media.

Video demos due 5/30

Example videos from last year



Greatest Online Anti-misinformation Tables (GOAT)

Group: Wild Swaying Goats
Members: Jyoti Lama, Max Haak, Reinard Fegamas, Grant Williams

Final showcase on 6/1

Tips for posters

- What to include?
 - Title, group members, contact info
 - Problem statement
 - Brief description of your system
 - Key features + screenshots
 - Overview of your process
- Use high-quality images
- Minimize text, use visual cues instead



Regional Anesthesia Reference App



W COLLEGE OF ENGINEERING
UNIVERSITY OF WASHINGTON
HUMAN-CENTERED DESIGN & ENGINEERING
eTutorBoard

Improving Efficiency of Anesthesiologists through App Redesign



Problem

In a fast-paced work environment, effective review of clinical knowledge is crucial for an anesthesiologist's time management.

Solution

We intuitively restructured content based on relevance to anesthesiologists' goals of expediency and the requirements of our client.

Updated



Block List (Homepage)

Instead of having to scroll through a long list of nerve blocks in the menu bar, users are now able to browse through all blocks with greater ease.

Updated



Block Detail

Instead of having to struggle through cluttered content and unhelpful images, users are now able to find the information they want efficiently.

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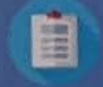


Calculator

Instead of having to interact with tiny buttons and confusing numbers, users are now able to calculate drug dosages with greater clarity and ease.

Process

Empathize



Came to understand the work of resident anesthesiologists through interviews and usability testing of the current app.

Ideate



We created low fidelity wireframes with design solutions based on their shared struggles.

Prototype



Combined our meaningful aesthetic decisions with the wireframe restructuring of crucial medical content to create a polished high fidelity prototype.

Test & Refine



After testing the usability of our redesign with 4 resident anesthesiologists at the UW Medical Center, we calibrated final revisions.

Team Capybara
2021-2022



Horizon Worlds: Object Scanner

Building the Metaverse with Real World Objects

Horizon Worlds & Metaverse

Horizon Worlds is a Metaverse experience where users play games, attend events, and build their own worlds to socialize through a virtual reality headset.

Design Question

How might we increase user engagement in Horizon Worlds via mobile interactions?

Solution

We designed a companion app that scans real world objects and imports them into Horizon Worlds, leading to more engaging and higher quality worlds.

How It Works

1

Point your camera at an object that you want to scan

2

Walk around the object while your phone is in scanning mode

3

Add the object to your Horizon Worlds Asset Library

4

Access the object through a VR headset and place it in world



Research

Teaching Ourselves

Competitive Analysis & Literature Review. Spent hours in Horizon Worlds, focusing on cross-platform experiences and key modality differences between phones and VR headsets. Reviewed best practices in VR research and design.

Learning from Others

User Interviews & Co-Design. Explored consumer habits, preferences, and design opportunities of users. Ran collaborative design sessions investigating potential utility of a mobile companion app, discovered excitement for augmented reality scanning.

Design

Sketches & Wireframes

Created and iterated on low fidelity sketches and wireframes based on input from our co-design sessions and user interviews.

Usability Tests & Interactive Prototype

Conducted six usability tests with individuals who were familiar with VR but had never used Horizon Worlds to ensure that the product concept was intuitive before building an interactive prototype.

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eTutorBoard

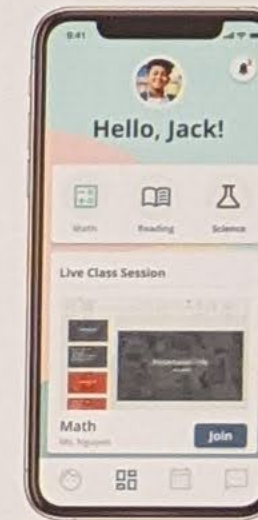
How can we design an integrated mobile-based solution to address the interpersonal communication needs in online education?

With an increase in demand for a better online learning experience, our mobile application aims to solve students' frustrations with the lack of online communication and interactions with peers and teachers.



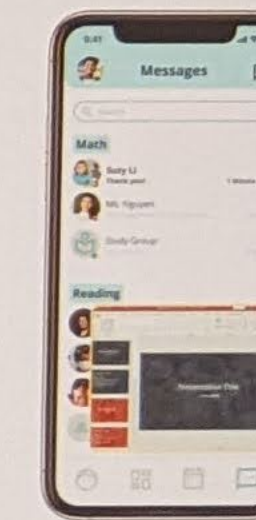
Live Session

Integrated live classroom where students can interact with teachers through raising their hands and answering poll questions.



Dashboard

Main dashboard page provides students access to individual classroom pages and one click to join live sessions.



Multi-Task

Minimizing feature allows students to access different parts of the application without the need to leave the live session.

Our Process



Research

Through user interviews with 16 student participants, we discovered a lack of communication and interactions in the online learning environment compared to in-person learning.



Prototype

We developed wireframes, low fidelity prototypes, and high fidelity prototypes aimed to address our design question.



Evaluate

Our team conducted usability studies with 6 students to test the high fidelity prototype. We used our findings and user feedback to make design improvements.

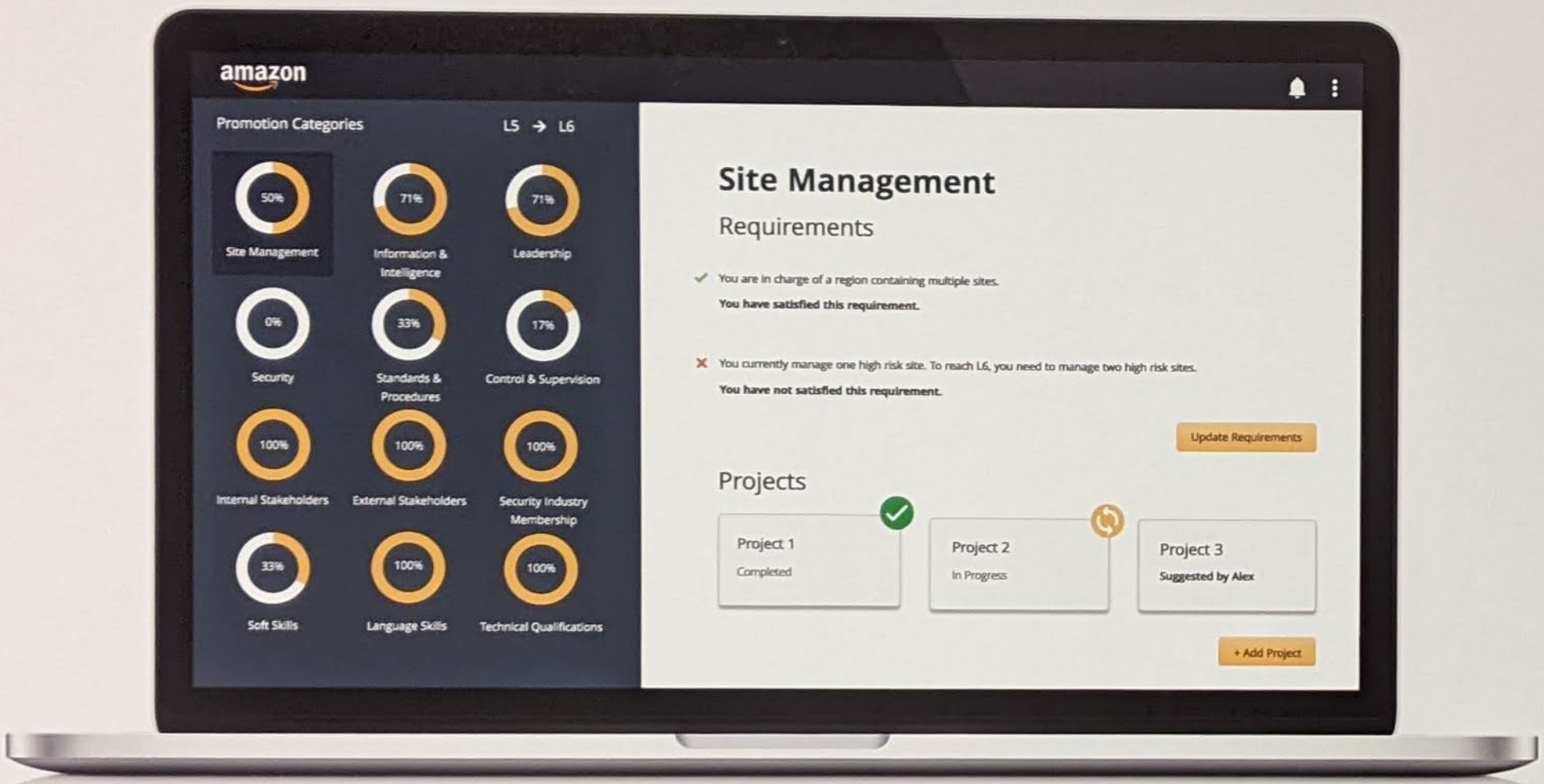
Competency Assessment Tool (CAT)

Amazon Global Security Operations



HUMAN CENTERED DESIGN & ENGINEERING
UNIVERSITY of WASHINGTON

Nathan Han
Jang Soo Lim
Monica Posluszny
Helene Shea



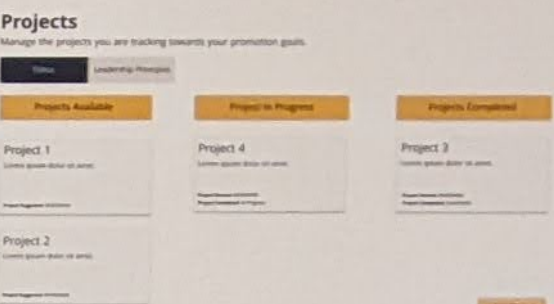
Key Features

Check and Update Promotion Requirements



Users can easily check the promotion requirements they have and have not fulfilled. They can also update the CAT as they gain additional qualifications within the 12 promotion categories.

Add & Manage Projects



Users can add, remove, and edit projects to be archived in the CAT. These projects can also be organized by project status, promotion categories, and leadership principles.

Manager Mode



Managers have an additional feature in the CAT that allows them to view the promotion status of the employees they are managing, assign/suggest projects to them, and leave feedback for them.

Export Promotion Status



Users can export a summary of their promotion progress and projects as a PDF.

What is the CAT?

The Competency Assessment Tool (CAT) is designed to help Amazon employees understand and track their promotion requirements. It was initially developed in Excel, but was never released for use.

Our Work

Our goal was to redesign and optimize the CAT to develop a research-driven prototype. Our redesign of the CAT has the same basic concept of the original CAT, but also has new features that can help improve the user's experience.

Design Process



User Research

Conducted user research to better understand Amazon Loss Prevention employees and the problem space revolving around tracking promotion requirements. Our group interviewed 5 and surveyed 65 employees.



Ideation

Conducted brainstorming and sketching sessions to explore our initial ideas on the key features and layout of the CAT based on our user research findings.



Prototyping

Created multiple, iterative prototypes of the CAT to rapidly test our visual design, interactive elements, and key functions.



Evaluation

Conducted usability testing on new iterations of the prototype with Amazon Loss Prevention employees to receive feedback and improve our previous design of the CAT.



Improving Efficiency of Anesthesiologists through App Redesign

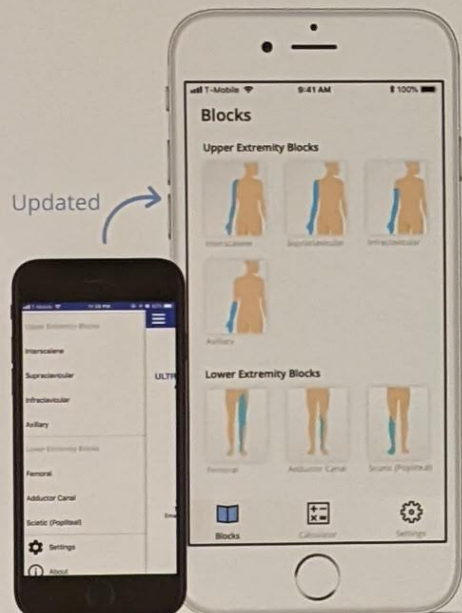


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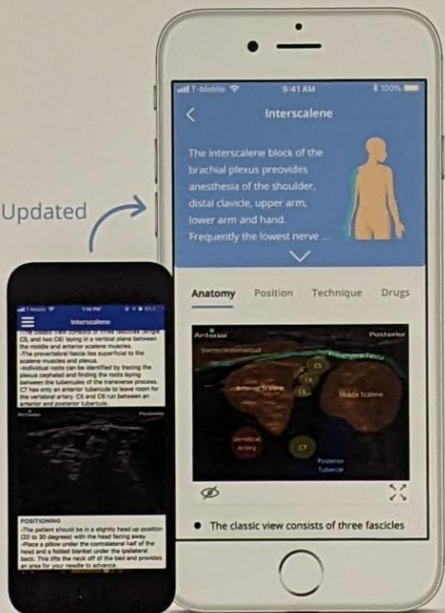
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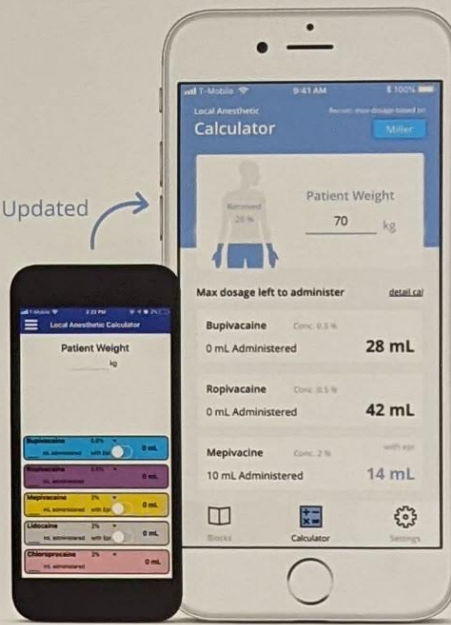
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Design tools

- Figma (check Community for templates)
- Canva
- Microsoft Designer

**Send a PDF of your poster (PDF)
to Kevin by Wed 5/31 if you'd
like it printed for you**

Poster work time!