Announcements

Project Video Round 1 (≤ 4 min) — due this Fri May 13

- System: basic working prototype of the idea
- Study: pilot results from at least five people
- Team assessment is due with the video submission

We recommend getting feedback in office hours this week! We will work hard with you to make sure the project is taking shape.
Feedback

Sociotechnical system

Social interactions define the system

Technical infrastructure defines the system

The two components are interrelated and both responsible
Sociotechnical system

**Why we use this term:** it captures that the technical elements of the system are not enough to determine its behavior or outcomes.

- Wikis don’t imply Wikipedia as the outcome
- Short text messages don’t imply Twitter as the outcome

“Sociotechnical systems” emphasizes that it’s the interplay of the tech and the people in the system that make it tick.
The intellectual challenge of social computing [Ackerman 2000]

“The social-technical gap is the divide between what we know we must support socially and what we can support technically.”

The social sciences teach us mechanisms that are important for effective social interaction. But we lack designs that facilitate those mechanisms.

**Intuitively:** we know how to throw parties IRL, but generally not how to engage those same mechanisms online.
Major research questions

Technological mediation lowers some transaction costs to connect with others, and increases other transaction costs. What new forms of social interaction might this produce?

How do we encourage pro-social behaviors, and regulate anti-social behaviors?

Current hot topics include:

- How social media users are influenced by invisible algorithms that change their experience
- How to empower underserved communities to organize and resist
Major research questions

Sociotechnical systems offer a new lens onto traditional social science theory:

How has technology-mediated interaction changed our relationships with each other and with the world?

By observing or manipulating the technology platform, can we learn how people interact with each other?
New data, new theories

Social science theory was built around a world where most interactions occurred offline.

Do online interactions allow us to observe social behavior in new ways, allowing us to extend or complement offline theories?

Do online interactions create new forms of social behavior that require new theory?
Predicting tie strength

The Strength of Weak Ties [Granovetter, Am. Jour. of Soc. ’73]

**Strong ties:** a small number of people you know very well

**Weak ties:** your large number of acquaintances

**Theory:** your weak ties are bridges to other parts of the network; they can help you find jobs and information

How well can you predict tie strength observationally using social media?
Predicting tie strength

[Gilbert and Karahalios, CHI ’09]

Most predictive:

- Days since last communication
- Days since first communication
- Wall words exchanged
- Mean strength of mutual friends

![Diagram showing the prediction of tie strength with various metrics and their contributions to Adj. R² = 0.534 and MAE = 0.0994.]

- **INTIMACY**
  - last comm
  - num friends
  - intimacy words
  - 32.8%

- **INTENSITY**
  - wall words
  - outbound posts
  - thread depth
  - 19.7%

- **DURATION**
  - first comm
  - 16.5%

- **SOCIAL DIST.**
  - educational diff
  - political diff
  - occupational diff
  - 13.8%

- **SERVICES**
  - links shared
  - apps shared
  - 7.9%

- **EMO. SUPPORT**
  - inbox positive words
  - wall positive words
  - 4.8%
Today

The Good Stuff

- Encouraging contributions
- Social media’s influence on us
- New models for online interaction

The Bad Stuff

- Trolls, harassment, and moderation
- Disinformation
- AIs in social environments
Encouraging contributions
Combating social loafing
[Beenen et al., CSCW ’04]

**Social loafing:** why should I contribute if many others could as well?

**Hypothesis:** calling out uniqueness will increase participation

**Method:** rating campaign on MovieLens (think: IMDB ratings)

“As someone with fairly unusual tastes, you have been an especially valuable user of MovieLens [...] You have rated movies that few others have rated: [...]”

**Result:** participants in uniqueness condition rated 18% more movies
How social media influences us

The Good (?) Stuff
Does SNS use impact tie strength? [Burke and Kraut 2014]

“The Internet Paradox” [Kraut 1998]: people are more lonely the more they use the internet. Does Facebook use really displace other forms of social interaction?

**Method:** Longitudinal time-series analysis of self-reported tie strength, compared to Facebook activity logs

**Result:** Composed pieces (comments, posts, messages) increase it substantially, but one-click pieces (likes) only by a bit
How does SNS use impact…

Well-being?

“Receiving targeted, composed communication from strong ties was associated with improvements in well-being while viewing friends' wide-audience broadcasts and receiving one-click feedback were not.”
[Burke and Kraut 2016]

Job hunting?

“Most people are helped through one of their numerous weak ties but a single stronger tie is significantly more valuable at the margin”
[Gee, Jones and Burke 2017]
Exposure to diverse political news?

“We find strong evidence that [social media] foster more varied online news diets. The results call into question fears about the vanishing potential for incidental news exposure in digital media environments.” [Scharkow et al. PNAS 2020]

“We [...] quantified the extent to which individuals encounter comparatively more or less diverse content while interacting via Facebook’s algorithmically ranked News Feed and further studied users’ choices to click through to ideologically discordant content. Compared with algorithmic ranking, individuals’ choices played a stronger role in limiting exposure to cross-cutting content.” [Bakshy, Messing, and Adamic Science 2015]
How does SNS use impact social comparison? [Burke et al. 2020]

Social comparison: individual and contextual trait; can be positive or negative in impact

Method: opt-in survey of Facebook users

Result: More FB = More social comparison

Worth considering: this work was done by three (well-respected) researchers within FB. How might that impact the study/paper?
New models for how we interact
Discussion

[Viégas and Donath, CHI '99]

Chat circles: “narrowcasting” via on-screen proximity
Combating censorship

[Hiruncharoenvate, Lin and Gilbert, ICWSM ’15]

The Chinese government censors sensitive topics on social media.

However, homophones can be difficult for censors to distinguish from intended use.

和谐 (slang ‘censorship’) vs. 河蟹 (river crab)

This work introduces an algorithm that decomposes words and nondeterministically creates homophones that are likely to create confusion for censors.
Aardvark: social search
[Horowitz and Kamvar; WWW ’10]

Technical challenge: question routing over IM

Use a joint model over topical relevance and social distance

Interesting equilibrium: people were more willing to answer questions than ask them!
Trolls, harassment, and moderation

The Bad Stuff
Anyone can become a troll

[Cheng et al., CSCW 2017]

**Popular press:** trolling is confined to an antisocial sociopathic minority. But is this true?

**Experiment:** put people in a good or bad mood, show them positive or negative initial posts in a thread

 Measure resulting trolling behavior
The effects compound.

Positive Mood

User1337 · 2 hours ago
I’m a woman, and I don’t think you should vote for a woman just because she is a woman. Vote for her because you believe she deserves it.

35% troll comments

Unscramble the following letters to form an English word: "P A P H Y"

Type in your answer.

Negative Mood

User1337 · 2 hours ago
I’m a woman, and I don’t think you should vote for a woman just because she is a woman. Vote for her because you believe she deserves it.

49% troll comments

Unscramble the following letters to form an English word: "D E A N Y O N"

Type in your answer.

Positive Norm

User1337 · 2 hours ago
Oh yes. By all means, vote for a Wall Street sellout - a lying, abuse-enabling, soon-to-be felon as our next President. And do it for your daughter. You’re quite the role model.

47% troll comments

Unscramble the following letters to form an English word: "P A P H Y"

Type in your answer.

Negative Norm

User1337 · 2 hours ago
Oh yes. By all means, vote for a Wall Street sellout - a lying, abuse-enabling, soon-to-be felon as our next President. And do it for your daughter. You’re quite the role model.

68% troll comments

Unscramble the following letters to form an English word: "D E A N Y O N"

Type in your answer.
Antisocial behavior tracks human diurnal mood patterns

Proportion of flagged posts on CNN.com

Daily negative affect [Gold & Macy 2011]
Online disinhibition effect

[Suler 2004]

A major theory as to why trolling happens: when we interact online, we say and do things that we would not do IRL. We self-disclose more, and we act out more. This is known as the online disinhibition effect: we have less inhibition when online.

Online disinhibition implies that we troll more online than offline. (It also implies that we write harsher CS 347 commentaries online than we might share in class, or to the author’s face.)
Anonymity

Should we use real names? Pseudonyms? Let people be anonymous? This is a classic, old question in the field.

Anonymous environments create greater disinhibition, which results in more trolling, negative affect, and antisocial behavior [Kiesler et al. 2012]

On the other hand, anonymity can foster stronger communal identity [Ren, Kraut, and Kiesler 2012] and more creativity [Jessup, Connolly, and Galegher 1990]
How do we manage trolls?

[Chandrasekharan et al., CSCW 2018]

**Question:** does banning bad behavior help, or just relocate the behavior?

**Dataset:** Reddit banned some subreddits for violating its hate speech policy

**Result:** many accounts left; those that stayed, did not introduce hate speech into other subreddits they migrated into
Friendsourced moderation

[Mahar, Karger and Zhang '18]

Friends intercept harassing emails before they appear in your inbox.

SQUADBOX

Fight back against harassment.

Try it out!

Put a squad of trusted friends, volunteers, or paid moderators between the world and your inbox.
Disinformation

The Bad Stuff
FAEK NEWS!!!

Misinformation spreads: Reddit’s Boston Bomber rumors were corrected, but the corrections spread too slowly. [Starbird et al. 2014]


Simple interventions (like reminders to think about accuracy) are effective [Pennycook et al 2020, 2021]
Disinformation campaigns
[Starbird, Arif, and Wilson 2019]

Question often posed: can’t we train classifiers to identify pieces of disinformation and automatically remove them?

But an individual piece of content is hard to disambiguate.

Starbird’s argument: it’s much more effective to study and classify disinformation campaigns — a collection of information actions
For more: take CS 278

Today was focused on recent research results in the space