

Welcome and Project Intro

Discovering the traces of disinformation on Instagram



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Web Science and Digital Libraries (WS-DL) Group
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Who Am I?

Dr. Michele Weigle

Professor of Computer Science

Web Science and Digital Libraries Research Group

Research interests: web science, social media, web archiving, information visualization

Wife, and mom of 2 boys



Who Was I?

Small-town Louisiana girl



Computer Science undergrad in Louisiana



Computer Science MS and PhD at UNC-Chapel Hill



Undergrad Experience



- Attended a relatively small CS dept in my home state, no graduate program
- Advisor (and later department chair) was female
- Thought about changing my major my first year
- Summer REU-like internship at GTE Labs in Boston after junior year
- Considered Louisiana-Lafayette, Alabama, NC State, and UNC for graduate school



Grad School Experience

- Chose UNC after campus visits
- Met amazing people from all over the world
- Worked with really smart people on interesting projects
- Got to travel (for free) - Italy, Sweden, Lake Tahoe, Norfolk
- Fellow female CS students helped me through and boosted my confidence



Why Did I Become a Professor?

- Inspired by mentors and undergraduate/graduate faculty
- Love learning new things
- Enjoy teaching
- Flexibility in time and research topics
- I loved being a graduate student, didn't want to leave academia



ODU



2006 - Joined as Assistant Professor

2012 - Tenure, promoted to Associate Professor

2018 – Promoted to Full Professor

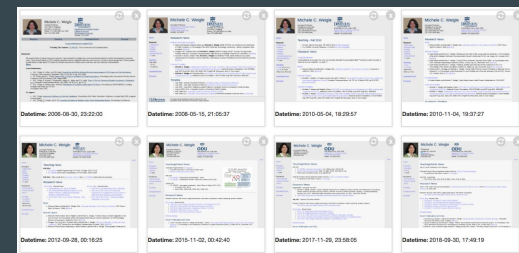


10 years ago with my 4th PhD graduate, Dr. Mo Almalag

Research interests (in chronological-ish order): TCP/IP networking, vehicular networks, sensor networks, web archiving, information visualization, social media, web science

Recent Teaching: Web Science, Data Visualization, Information Visualization and Visual Analytics, Research Methods (Intro to PhD)

Web Science and Digital Libraries



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A bit about me:
 This is a Ph.D. student in the Department of Computer Science at UNC in Chapel Hill. These are the research projects I'm involved in at UNC:

- [DART: Cross \(Cross\)land and Real Time Transfer](#)
- [p2pNeighborhood Project](#)
- [Collaborative Content Collaborations Blue Project](#)

Here are some other research-related links:

- [Fuzzing performance in my research archive classes](#)
- [My research: CHALLENGE: RESEARCH](#)

Last year (2017-18), I was in charge of recording up folks to talk at [Demosys.Tech](#), which covers during the Fall and Spring semesters on Fridays at 5pm to 7PM. IIS.

NEU I earned my BS in [computer science](#) at [Northwest Louisiana University](#) in Monroe. While there, I was a member of NEU's [computer science](#) [Boards](#).

180: Openness to [Dr. Francis de Lencastre](#), a beautiful small town on the banks of the mighty [Vidourze River](#), known for its waterfalls, plantations, terraces and castles-old. The old town, take a look at one of C.C. Lockwood's [paintings](#) of the Mighty Vidourze.

This is a member of the [United Methodist Church](#), specifically, the [St. Francis de Lencastre UMC](#). Community. This attending [Lutheran Church](#) in Chapel Hill.

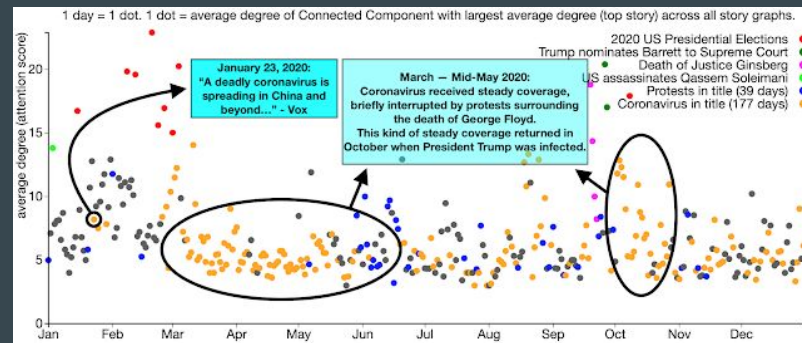
1997-06-28, 17:52:42

<https://ws-dl.blogspot.com/2020/05/2020-05-21-visualizing-webpage-changes.html>



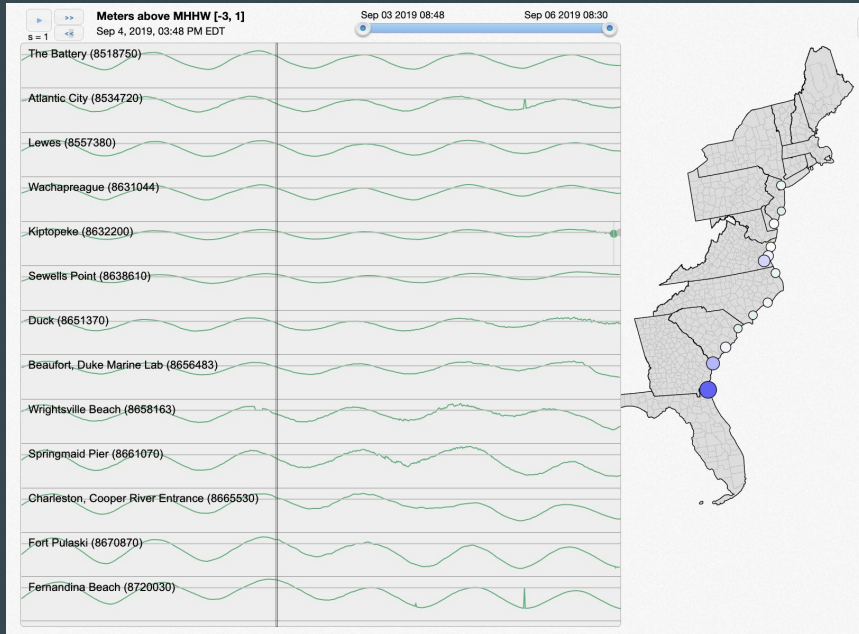
<https://oduwsdl.github.io/> @WebSciDL

Aturban et al., "Where Did the Web Archive Go?", <https://arxiv.org/abs/2108.05939>



<https://ws-dl.blogspot.com/2021/01/2020-01-20-366-dots-in-2020-top-news.html>

Information Visualization



<https://www.cs.odu.edu/~mweigle/research/atlantic-vis/>

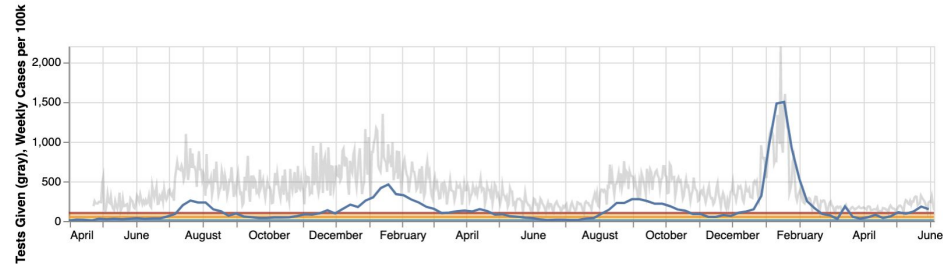
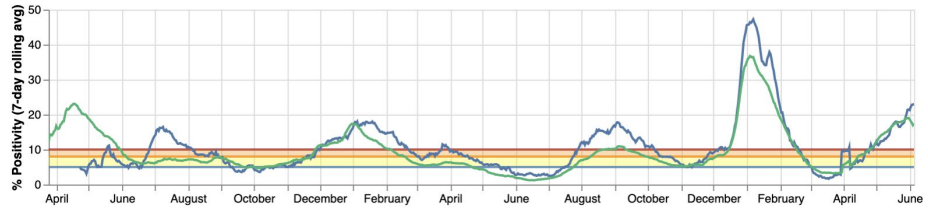
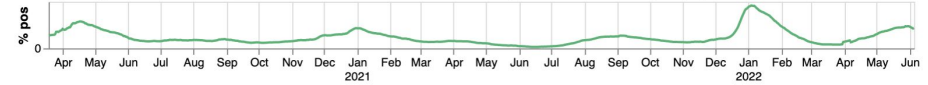
Virginia at 18.59% positivity (rolling avg: 17.48%) on 6/4/2022

Norfolk at 27.61% positivity (rolling avg: 23.16%) on 6/4/2022

148.72 weekly cases/100k on 5/31/2022

Green: State Avg, Blue: Norfolk

Select range in top chart to zoom in larger charts or use radio buttons under charts (Source: VDH, data.virginia.gov)



<https://observablehq.com/@weiglemc/virginia-covid-status-pcr-pos-cases>

REU Project: Discovering the Traces of Disinformation on Instagram

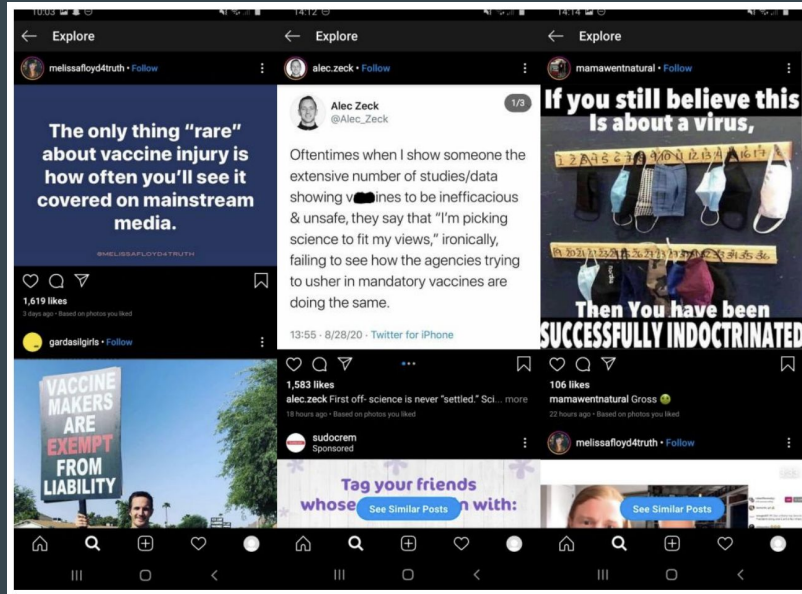


Image credit: Center for Countering Digital Hate (CCDH), "Malgorithm: How Instagram's algorithm publishes misinformation and hate to millions during a pandemic", March 2021, <https://www.counterhate.com/malgorithm>

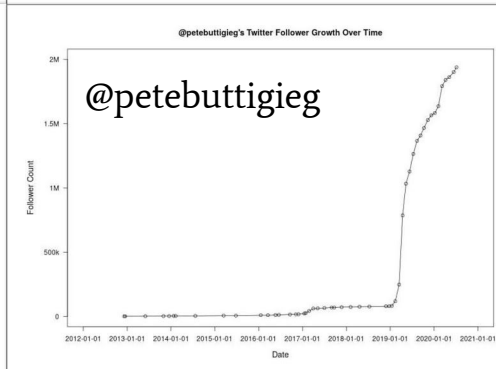
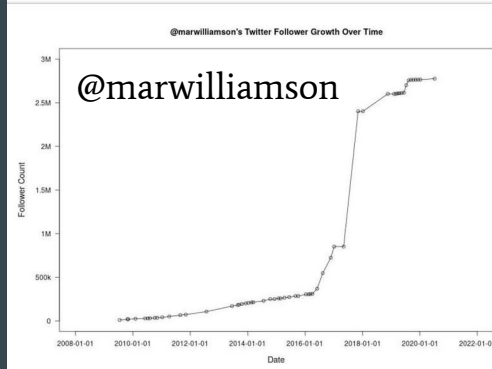
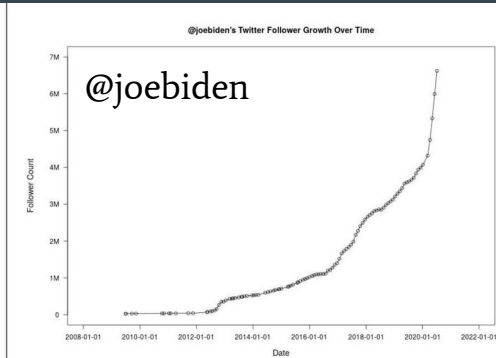
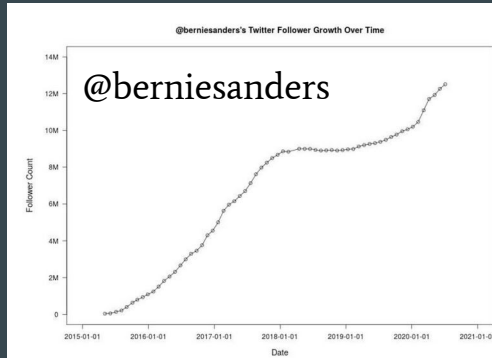
Metadata of users and posts on Twitter has been used to identify potential sources of disinformation

- follower counts
- number of likes, shares, retweets
- retweet networks

Can we do the same with Instagram?

Instagram: 1.21 billion monthly active users
Twitter: 330 million monthly active users

Investigating Historical Follower Counts on Twitter

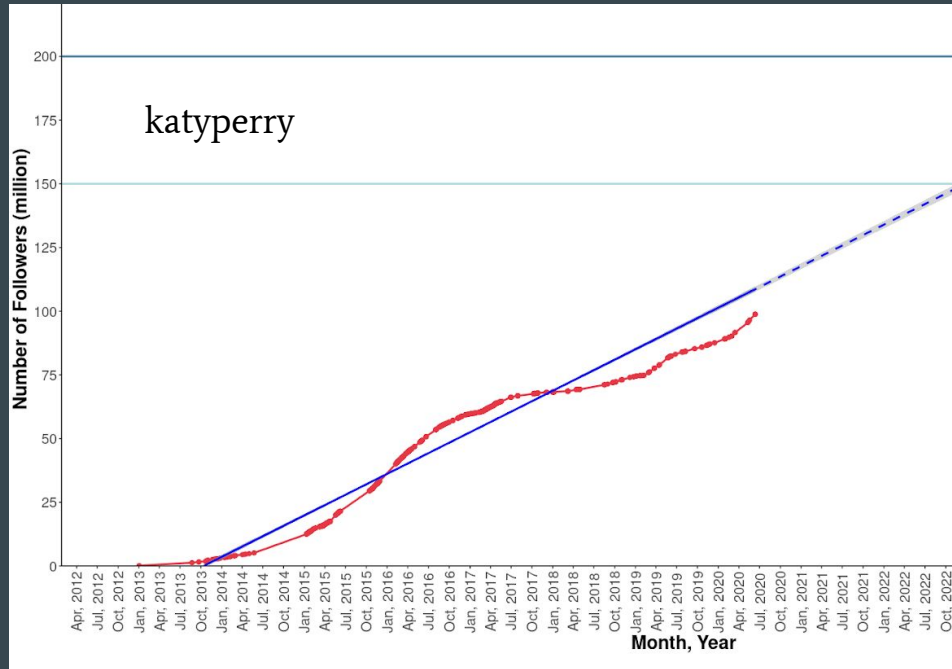


Analysis performed late 2020

Used archived Twitter account pages to reconstruct historical follower counts

<https://ws-dl.blogspot.com/2020/08/2020-08-05-historical-twitter-follower.html>

Can we do the same for Instagram?

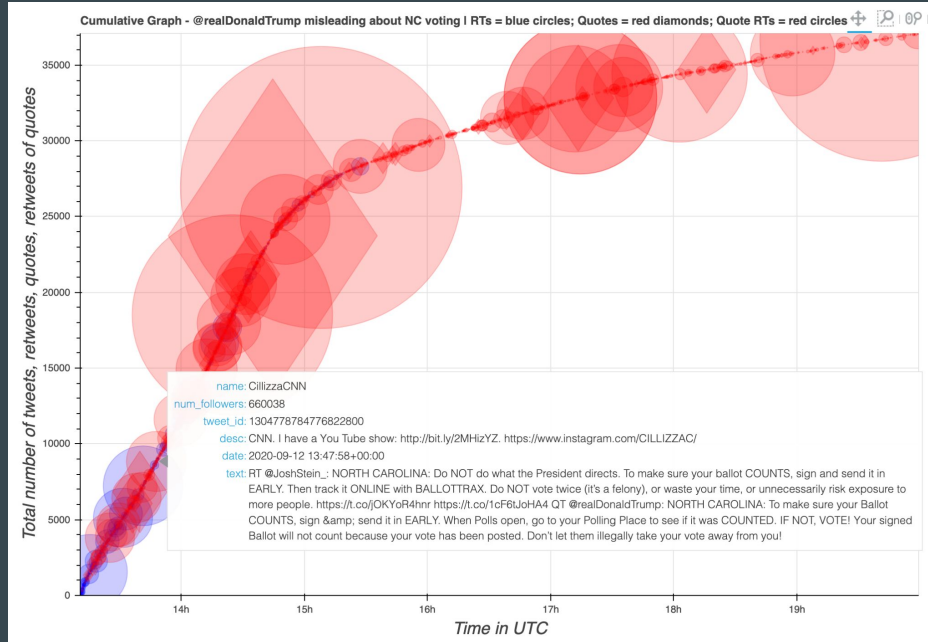


Katy Perry (katyperry) has 20th most popular Instagram account (in Oct 2020)

But, only about 1/3 of posts are archived

What does that mean for less popular accounts?

Investigating Spread of Misleading Tweets



@realDonaldTrump tweet about NC voting from 2020

Blue circles - retweets

Red diamonds - quote tweets

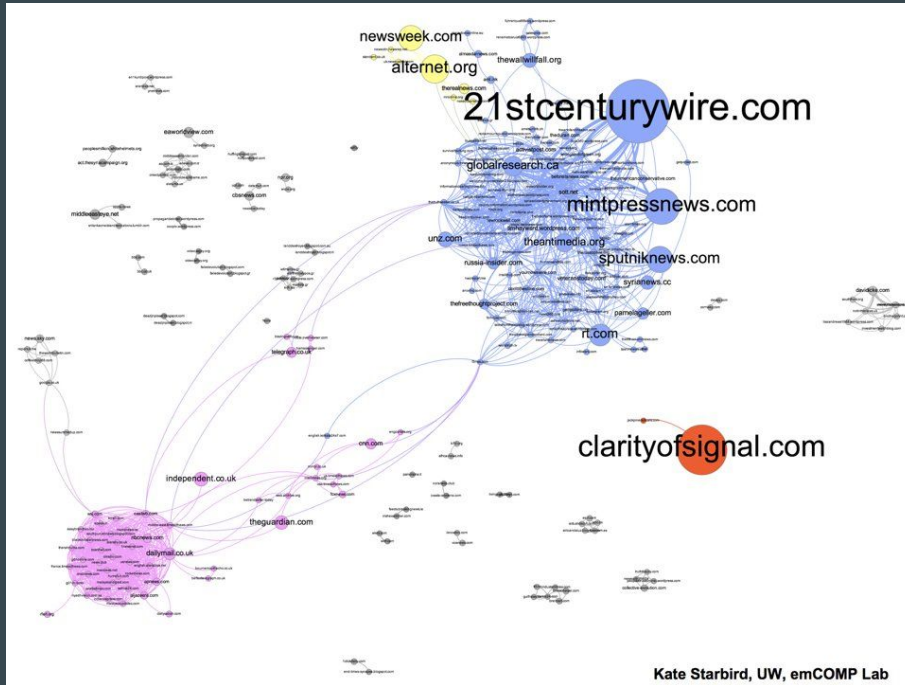
Red circles - retweets of quotes

Interactive chart can show the tweet content

Most later red activity are corrections

http://faculty.washington.edu/kstarbi/Trump_Sept12.html, <https://twitter.com/katestarbird/status/1304858772586651648>

Investigating Twitter Link Sharing Networks



Nodes are website domains

An edge means that a Twitter account shared links to both domains

Pink - sharing of 2 AP news articles

Blue - "Alternative Media Ecosystem", repeated content sharing

<https://medium.com/@katestarbird/content-sharing-within-the-alternative-media-echo-system-the-case-of-the-white-helmets-f34434325e77>

Can we translate these types of analysis to Instagram?

- Instagram posts don't include links
- Can we track how posts or images are shared?
 - use image as proxy for website domain
- What about sharing of specific memes?
 - tie in to Dr. Frydenlund's project
- What tools can we build to assist in this type of analysis?