Course Number/Title: COMM 408: Big Data and Communication Tools
University of Michigan-Ann Arbor
Department of Communication and Media
Fall 2022
Time/Dates: Mon/Wed 1:00-2:30 PM
Location: G444A Mason/Angell Hall
Instructor Name: Dr. Corinne Jones
Instructor Email: xxxxx@umich.edu **or Canvas Messenger (preferred)**
Office Hours:
Office Location:

*Please note, this syllabus is subject to change at the discretion of the instructor. Changes will be announced in class and as announcements on Canvas.

Many people assume "big data" sets are neutral purveyors of truth, and students in humanities and social sciences communication fields increasingly use freely available tools to scrape "public" information from social media sites. However, is this data really an accurate representation of the social media landscape, and what are the ethical implications of it? Students in this course learn to use some simple and freely available tools to collect and analyze "public" data alongside critical analytic frameworks to communicate about this data accurately and ethically. In the first half of the class, students compose two smaller papers about their analyses. In the second half of the class, students pose further qualitative questions about their data to compose a longer paper.

*Some of this course draws from the work of Salter, A., Stanfill, M., Giroux, A. L., Vie, S., deWinter, J., Flores, L., Blodgett, B., Steele, C. K., & Kane, L. (2020). Understanding Digital Culture. Understanding Digital Culture. https://understandingdigitalculture.hcommons.org/institute-overview/

Course Outcomes
By the end of this course, students will:
- (1) Define big data, explain some of the challenges it poses for communications researchers, and develop and refine research questions that are appropriate for "big data" research.
- (2) Use basic data scraping tools from TAGS (Twitter) and the Digital Methods Initiative (YouTube), and create simple data visualizations like Word Clouds, Timelines, and Networks, through browser-based tools and simple programs like Excel.
- (3) Critically evaluate and analyze big data and data visualizations and add qualitative analysis to those big data to compose well-supported arguments.
- (4) Develop critical and reflexive ethical principles for the use of big data.

Required Texts
- All reading material will be available through U-M's library or PDFs through Canvas.

Other Required Materials
- Computer, Internet access, and familiarity with computer programs and technology
- A word processing program (e.g., Microsoft Word)
- Some technical skill and a basic understanding of Excel.

- A PDF reader (e.g., Adobe Reader)
- All papers must use MLA or APA formatting (See the Purdue OWL site http://owl.english.purdue.edu/owl/.)
- Having your own laptop or computer will be helpful for some assignments, but I have designed the class so that it can be completed without your own computer.

Grade Breakdown:

Participation* (24 required classes x 0.5 point each), 12%	12 points
Initial Research Questions (3 Due x 3 points each), 9%	9 points
Revised Research Questions, (3 Due x 3 points each), 9%	9 points
Data Visualizations, (4 Due x 2 points each), 12%	8 points
Peer and Self Review, (3 Due x 2 points each), 6%	6 points
YouTube Mini-Paper, 14%	14.5 points
Twitter Mini-Paper 14%	14.5 points
Final Paper, 18%	18 points
Final Ethical Reflection and Principles, 9 %	9 points

Final Grade out of 100 points

* Participation is based on in-class work. Since this class is very technological and workshop focused, "participation" is crucial in this class. However, I recognize there are multiple forms of participation, and I understand that attendance must be flexible. If you foresee any issues, please let me know as soon as possible so that we can make other arrangements.

Grading Scale:

A	94-100	B-	80-83	D+	67-69		
A-	90-93	C+	77-79	D	64-66		
B+	87-89	C	74-76	D-	60-63		
B	84-86	C-	70-73	F	59 and below		

If the grades are between cutoff percentages at the end of the semester, I will round the final grade up or down. If the grade is a 93.45%, I round that down to 93% for an A-. If the grade is 93.55%, I round that up to 94% for an A.

Assignment Descriptions

Participation: "Participation" is based on in-class work, and it is crucial since we have so many workshops this semester. However, I recognize there are multiple forms of participation, and I understand that attendance must be flexible. If you foresee any issues, please let me know as soon as possible so that we can make other arrangements. You can miss up to three classes this semester, no questions asked, with no penalty to your grade. You will lose points for being excessively late. However, you will be responsible for what we do in class, so I highly suggest that you contact me.

Initial Research Questions (3 Due x 3 points each): The purpose of this scaffolding assignment is to help you start to articulating questions to build toward the mini-papers and final assignments in this course. Thus, your main task in this assignment is to articulate a specific research question for the upcoming assignment. The assignment will include (1) a research question, and (2) the context.

Revised Research Questions, (3 Due x 3 points each): Your main task in this assignment is to revise your initial research questions based on the tools we have explored and what you have begun to discover. Like the initial research question, this question should be specific, but it should critically account for what kinds of questions are feasible and realistic to answer, given the types of evidence that we can collect with the tools in this class. These will include (1) the initial research question, (2), the revised research question, and (3) your rationale for why the question stayed the same or changed.

Data Visualizations, (4 Due x 2 points each): Your main task for these data visualization assignments is to simply turn in the data visualization that we created in class. Since you will use some of these data visualizations in your mini-papers and in your final papers, you will turn in the visualizations that you create in class to scaffold you into those bigger assignments.

Peer and Self Review, (3 Due x 2 points each): Peer and self-reviews are graded based on completion. They consist of three parts; (1) Drafts and Questions, which are turned in on Canvas before class, and you will bring a hard copy to class. (2) Peer reviews, which are completed on paper, and consist of answering your peers' question, filling in a blank rubric, and answering a series of questions. (3) Self-Review, which are completed on paper, and consist of filling out a blank rubric, and determining how you will revise.

YouTube Mini-Paper: Your main task in this mini-paper is to start making claims about your big data visualizations about YouTube data, considering both the limitations of the data and the ethical questions that come up with this data. The paper will be about 3-4 double spaced pages before citations, and it will use an academic writing style and prose. It will include your research questions, methods, results/evidence, analysis, a mini-claim, and further questions. This paper is meant to scaffold you into your final paper.

Twitter Mini-Paper: Your main task in this mini-paper is to start making claims about your big data visualizations about Twitter data, considering both the limitations of the data and the ethical questions that come up with this data. The paper will be about 3-4 double spaced pages before citations, and it will use an academic writing style and prose. It will include your research questions, methods, results/evidence, analysis, a mini-claim, and further questions. This paper is meant to scaffold you into your final paper.

Final Paper: Your main task in this paper is to develop one of your earlier mini-papers into a longer paper (1,200 – 1,700 words before citations) to make more nuanced and well-supported claims about your data, considering both the limitations of the data and the ethical questions that come up with this data. While in your mini papers, you mostly used data visualizations and other representations, in this paper you will add close qualitative analysis through concordance analysis or one of the other frameworks we read in class. The paper will use an academic writing style and prose. They will have a clear thesis, relevant background information, a research question, methods, evidence, analysis, and a conclusion.

Final Ethical Reflection and Principles: As we can see from most of the ethical frameworks that we have looked at this semester, an ethical approach to "big data" does not really involve a "checkmark" approach. Instead, since circumstances change, big data ethics are an ongoing

process of reflection and checking in. Your main task for this final ethics reflection is to articulate your own position and set of principles that you have developed over the course of the semester. They will include (1) a reflection on perspective and (2) your ethical principles and a few bullet points elaborating.

Syllabus Statements [altered for institutional context]
Calendar
To view the full academic calendar, please visit:
https://ro.umich.edu/sites/default/files/calendar/pdfs/Cal_2022-2023.pdf

Tentative Schedule:

Week	Readings (Due by class time)	Guiding Questions and In-Class work	Assignments (Due by class time, except for first class)
Week 1: Aug. 29: **Mon.**		Introduction to course. How might you use "big data" in your careers in communication and media? - Brand Communication - Data Analysis for Communicators - A Guide for Data Analysts - Data Analytics as communication - Telling Stories with Data Go over Claims and Evidence handouts. Look at first major assignments for Twitter and YouTube and talk about developing research questions. Think about what general topics you are interested in exploring this semester, considering the major assignments and how they will help you build into your final assignments. Get into jigsaw groups for next class.	Participation 1.

Week 1: Aug. 31: **Wed.**	danah boyd & Kate Crawford (2012) Critical Questions for Big Data, *Information, Communication & Society*, 15:5, 662-679, DOI: 10.1080/1369118X.2012. 678878	Defining "big data" and defining key challenges **Jigsaw**: Get into groups around each key challenge. Define and switch. In 2nd groups, answer how these issues complicate evidence from the evidence handout. Watch: Dr. Stephanie Vie (13 mins) Watch: Dr. Stephanie Vie (14 mins) Begin developing research questions from Dr. Mel Stanfill's handout (in Canvas). **Briefly tell me about your YouTube topics so that I can okay them.**	Participation 2.
Week 2: Sept. 5 **Mon.**	Labor Day	Labor Day	
Week 2: Sept. 7 **Wed.**	Markham, A., Tiidenberg, K., Herman, A. (2018). Ethics as Methods: doing ethics in the era of big data research - introduction" *Social media and society, 4(3),* p. 1-9. https://doi.org/10.1177/20 56305118784502 Skim: YouTube Statistics and Trends 2022	**First part of class**: Ethics Reflection and principles. Look at AoIR as an example (pg. 7, pg. 19, and 69-71) Ethical Reflection Worksheet completed in class for participation. People as data points? **Second part of class**: Go over YouTube Data handout in Canvas that walks us through how to use: **Digital Methods Initiative.** (n.d.). *DMI Tools*. Digital Methods.Net. https://wiki.digitalmethods.net/Dmi /ToolDatabase	Participation 3. **Initial Research Questions for YouTube Mini-Paper due by class time**

		Work through handout in Canvas ("NetVizz_YouTube_Handout") Supplementary Handout: [NEH YouTube Tutorial here](#). • What are your selection criteria? Why are you selecting these search terms over others?	
Week 3: Sept. 12 **Mon.**	Andrejevic, M., & Gates, K. (2014). [Big data surveillance: introduction](#). *Surveillance & Society*, *12*(2), 185–196. https://doi.org/10.24908/ss .v12i2.5242	How do algorithms effect what we see, and how do they effect people? In-class practice making Word Clouds and counting words. We will be using [Voyant Tools](#). (See "Voyant_WordCloud_handout" in Canvas)	Participation 4. **Data Visualization:** **Word Clouds Due and relevant word counts due at the end of class**
Week 3: Sept. 14 **Wed.**	Christian Fuchs, *Social Media: A Critical Introduction*. Chapter 3 (in Canvas)	**First Part of Class:** How does the digital economy work? Privacy in the digital economy? Watch: • [Social Media Analytics](#) • [Social Media Analytics in Excel](#) • [BBC Ideas](#) • [TEDTalks](#) **Second Part of Class:** Practice counting and sorting data with Excel. Use "Excel_Counting_And_Sorting_Ha ndout" in Canvas. Start Preparing Spreadsheets for Timelines. Use the "Excel_Timelines_Handout" in Canvas.	Participation 5.
Week 4: Sept. 19	Safiya Noble (2018). *Algorithms of Oppression.*	**First Part of Class:**	Participation 6.

Mon.	Chapter 1: A Society Searching	What role do algorithms play in what we see online? **Second Part of Class:** Create timelines. Use the "Excel_Timelines_Handout" in Canvas.	**Data Visualization:** **Timelines due at the end of class**
Week 4: Sept. 21 **Wed.**		Peer and Self Review Day Completed in-class. Turn in draft online before class.	Participation 7. **Peer and Self Review** **Draft due by Class time in Canvas** **Peer and Self Review Completed in Class**
Week 5: Sept. 26 **Mon.**	Catherine D'Ignazio and Lauren F. Klein. *Data Feminism*: Introduction.	**First Part of Class**: Talk about data feminism and what it is. Ethical Reflection Worksheet completed in class for participation. **Second Part of Class**: Work on Revising research questions/finishing paper. Ask any final questions.	Participation 8. **Revised Research Questions for YouTube Mini-paper due after class**
Week 5: Sept. 28 **Wed.**		Skim: Twitter. Look at Tweetdeck Begin developing research questions from Dr. Mel Stanfill's handout (in Canvas). **Briefly tell me about your Twitter topics so that I can okay them.**	Participation 9. **YouTube Mini Paper Due by class time**

Week 6: Oct. 3 **Mon.**	Feisler, C. & Proferes N. (2018). "Participant" Perceptions of Twitter Research Ethics. *Social Media + Society, 4* (1), 1-14. Doi: https://doi.org/10.1177/2056305118763366	**Workshop**: TAGS Work through issues with TAGS in class. (see "TAGS_Twitter_Handout" in Canvas). Consider: What are your selection criteria? Why are you selecting these search terms over others?	Participation 10. **Initial Research Questions for Twitter Mini-Paper due.**
Week 6: Oct. 5 **Wed.**	Whitney Phillips. The Oxygen of Amplification. (only the executive summary linked above; not the full report).	**First part of class**: TAGS continued. Use TAGS to explore "top" retweets, users, etc. (see "TAGS_Twitter_Handout" in Canvas). What are the risks of amplification? Who is amplified online, and who is safe online to contribute to the conversation? U-Mich Video: Extremism and Social Media **Second part of class**: Word Clouds and Word Counts: In-class practice making Word Clouds and counting words. We will be using Voyant Tools. (See "Voyant_WordCloud_handout" in Canvas) Create Word Clouds like we did from YouTube Data.	Participation 11.
Week 7: Oct. 10 **Mon.**	Leurs, Koen. (2017). feminist data studies: using digital methods for ethical, reflexive and situated socio-cultural research. *Feminist review.*	**First Part of Class:** What ethical issues come up with Twitter research and what is the problem with the "view from nowhere"? Practice concordance analysis to see words in context.	Participation 12. **Data Visualization:**

	pp. 130–54, doi:10.1057/s41305-017-0043-1.	**Second Part of class** You can work online with Voyant Tools, or [LexTutor] (see "Lex-Tutor_Concordance Analysis" Handout in Canvas) or download Antconc onto your own machine (see "Antconc_concordance-handout" handout in Canvas). Anthony, L. (2017). AntConc (Version 1.2.1) [Computer Software]. Tokyo, Japan: Waseda University. Available from https://www.laurenceanthony.net/software **Get into groups to decide what network concepts you will define next time.**	**Word Cloud and Screenshot of one word that you looked at in context, using the concordance analysis tools from class due after class.** **Bring your own computers if you want to try to use AntConc (more powerful concordance tool, but not necessary).**
Week 7: Oct. 12 **Wed.**	Ahnert, R., Ahnert, S., Coleman, C. N. & Weingart, B. *The Network Turn: Changing Perspectives in the Humanities* (S. Rayner & L. Tehter, Eds.). Cambridge University Press. https://doi.org/10.1017/9781108866804 Introduction (1-9) And Chapter 5 (73-99) Be able to define: • Network Analysis • Nodes • Edges • Directed Networks • Weighted Networks	Groups define basic network concepts from reading. **Watch**: Dr. Mel Stanfill define basic network concepts (first part of video) (15 mins) **Watch**: Dr. Mel Stanfill on how to think about things like betweenness centrality and clustering. (*note*: We will not be using Gephi for this class because of installation and IT restrictions, but pay attention to *how* Stanfill uses those concepts to draw larger conclusions while noting limitations). (14 mins)	Participation 13.

	• Directed and Weighted Networks • Connections and degrees • Closeness Centrality • Betweenness Centrality • The rhetoric surrounding quantification vs. the rhetorical power of quantification Not required; Supplementary reading: https://towardsdatascience.com/how-to-get-started-with-social-network-analysis-6d527685d374		
Week 8: Oct. 17 **Mon.**	Fall Study Break	Fall Study Break	
Week 8: Oct. 19 **Wed.**	Grant Bollmer (2019). Networks before the Internet. *Journal of Cinema and Media Studies 59*(1), pp. 142-148. DOI: https://doi.org/10.1353/cj.2019.0071	**First part of class:** Start to get spreadsheets ready for Onodo.org ("Onodo_Networks_Handout" in Canvas) **Second part of class:** What do these networks represent, and could they be imagined in any other way? Do "nodes" suggest, individual people, who are separate from systems? Is that an accurate representation?	Participation 14.
Week 9: Oct. 24 **Mon.**		**First part of class:** Create networks from Onodo.org ("Onodo_Networks_Handout" in Canvas)	Participation 15. **Data Visualization:**

			Turn in screenshot or image of network after class
Week 9: Oct. 26 **Wed.**		Peer and Self Review Day Completed in-class. Turn in draft online before class.	Participation 16. **Peer and Self Review** **Draft due by Class time in Canvas** **Peer and Self Review Completed in Class**
Week 10: Oct. 31 **Mon.**	Bailey, Moya. (2015). #transform(ing)DH Writing and Research: An Autoethnography of Digital Humanities and Feminist Ethics. *Digital Humanities Quarterly,* *9*(2) http://digitalhumanities.org:8081/dhq/vol/9/2/000209/000209.html	**First Part of Class**: Talk about Bailey's methods. Ethical Reflection Worksheet completed in class for participation. **Second part of Class:** Work through any issues with your networks and revise research questions	Participation 17. **Revised Research Questions for Twitter Mini-Paper due after class**
Week 10: Nov. 2 **Wed.**		**First part of class:** Looking ahead to Final Paper. Bring both papers with you to class to think about how you can ask further humanist questions and how to expand your questions. Begin developing research questions from Dr. Mel Stanfill's handout (in Canvas).	Participation 18. **Twitter Mini-Paper Due by class time**

		Briefly tell me about your Final Paper topics so that I can okay them. **Second part of class:** Use the library to start to identify other sources that you will use in your final papers.	
Week 11: Nov. 7 **Mon.**	Gee, J. P. (2014). *How to Do Discourse Analysis: A toolkit* (2nd. ed.). New York, NY: Routledge. 2011 first edition, 2nd edition 2014. (in Canvas)	**First Part of Class:** Talk about "discourse analysis." What is it? Can you use some of these tools for your paper? **Second part of class:** Continue looking for sources for your final paper in class	Participation 19. **Initial Research Questions for Final paper due by class time**
Week 11: Nov. 9 **Wed.**	**Example of Twitter Research with Qualitative Analysis**: Navar-Gill and Stanfill "We Shouldn't Have to Trend to Make You Listen": Queer Fan Hashtag Campaigns as Production Interventions. *Journal of Film and Video*, *70*(3-4), 85+. (in Canvas)	**First part of class:** Be prepared to talk the evidence that Navar-Gill and Stanfill use (pay particular attention to how they attend to the limits of big data!), any ethical considerations, and how the authors use the evidence to support their claims. Revisit **Claims and Evidence Handouts**. Group work to identify what evidence they are using and how they are using it. **Second half of class**: Bring some sort of textual data that you are interested in exploring further (I suggest bringing text from whatever paper you want to expand)	Participation 20.
Week 12: Nov. 14 **Mon.**	Pennington, D. R. (2017) Coding Non-Text Data. In Luke Sloan and Anabel Quan-Haase (Eds.) *The Sage Handbook of Social Media Research Methods* (232-250) Retrieved from	**First Part of Class:** Talk about ways to analyze non-text data. How is it the same as discourse analysis? Different? Can you use some of these tools for your paper?	Participation 21.

	https://strathprints.strath.ac.uk/57181/1/Pennington_Sage_2017_Coding_of_non_text_data.pdf	**Second part of class:** Continue looking for sources for your final paper in class	
Week 12: Nov. 16 **Wed.**	**Example of YouTube Research:** Dekavalla, M. (2022). Facework in Confessional Videos by YouTube Content Creators. Convergence, 28(3), 854–866. https://doi.org/10.1177/13548565221085812	**First part of class:** Be prepared to talk the evidence that Dekavalla uses (pay particular attention to how they attend to the limits of big data!), any ethical considerations, and how the authors use the evidence to support their claims. Revisit **Claims and Evidence Handouts**. Group work to identify what evidence they are using and how they are using it. **Second half of class**: Bring some sort of image data that you are interested in exploring further (I suggest bringing text from whatever paper you want to expand) **Find an academic article that uses data visualizations** (timelines, networks, word clouds) and be prepared to discuss next class.	Participation 22.

Week 13:
 	
Nov. 21
Mon.
	Read your selected article that uses data visualizations.	**First half of class**: Get into groups and share how each author used data visualizations in their research.
		
		Consider how they used it as **evidence** to back up their **claims.**
		
		Pick one article from each group and be prepared to share with the class:
		   a) What their argument/claim was.
		   b) What their *evidence* was (see handout) and how they used a data visualization as
			Participation 23.
			
			Bring your selected article that uses data visualizations to class for participation points.

		evidence to support that claim c) *How* they qualitatively analyzed their data. d) *How* it was dis/similar or the same to the examples we looked at. e) What, if any, ethical considerations they took.	
Week 13: Nov. 23 **Wed.**	**Fall Break**		
Week 14: Nov. 28 **Mon.**		Peer and Self Review Day Completed in-class. Turn in draft online before class.	Participation 24. **Peer and Self Review** **Draft due by Class time in Canvas** **Peer and Self Review Completed in Class**
Week 14: Nov. 30 **Wed.**		Work/Draft Day for questions etc.	Participation 25. **Revised Research Questions for Final Paper due after class**
Week 15: Dec. 5 **Mon.**	Skim/explore: Wolff. W.I. (2018). Twitter Archives: A discussion of Systems, Methods, Visualizations, and Ethics. *Kairos: A Journal of Rhetoric, Technology, and Pedagogy, 22*(2). Retrieved 3 Mar. 2019,	**First part of class:** Explore Other Tools; which ones might you try in the future? Why? What precautions will you take? **Second part of Class:** Complete Ethical Reflections Day	Participation 26. Final Ethical Reflection and Principles due after class.

	from http://praxis.technorhetoric.net/PraxisWiki:_:twitter%20archives Look at other tools on Digital Methods.net And read about social media analytics tools		
Week 15: Dec. 7 **Wed.**		Work/Draft Day **Delete your data!**	Participation 27. **Final Papers Due after class**
Week 16: Dec. 10-11	Study Days		
Week 16: Dec. 12-16	Final Examinations		