Data & Society (SOC 225 B: 5 Credit)

Spring Quarter, 2022

Class Schedule

Lecture:	Asynchronous
Lab BA:	Virtual, Friday 1:30-2:20
Lab BB:	Virtual, Friday 2:30-3:20
URL:	https://canvas.uw.edu/

Professor

Name:	Zack W. Almquist
Office:	Zoom
Office Hours:	By Appointment
Email:	zalmquist@uw.edu

Teaching Assistants/Lab Instructors

Name:	Kovid Puria
Office:	Zoom
Office Hours:	W 4:00-5:00 pm
Email:	kpuria@uw.edu

Name:	Kwong-Yu Wong
Office:	Zoom
Office Hours:	F 3:30-4:30
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Course Description

Social implications of the digital revolution, including ethical issues associated with algorithmic design and privacy. Discusses data science as a new occupation that uses data to understand or influence people's behavior. Students will use a sociological lens to explore how our increasingly digital lifestyle changes institutions and social relations.

Sociology and Social Inquiry Exemplars

Course Objectives

- Explain how increased data availability changes contemporary institutions Examine how technology and data reveal and shape interpersonal relations;
- Reflect on the ethical and privacy considerations that arise with new, passively captured, data sources;
- Compare the role of contemporary advances in data collection and communication with historical leaps forward in communication technology;
- Describe the steps involved in data science, from data acquisition to insight, and the role of human interpretation and decision-making at each point in the process;
- Students completing the optional lab portion will, additionally, manipulate and summarize digital trace data using R and RStudio.

Prerequisites

None.

Course Requirements

Asynchronous Format

This class is designated distance learning (DL) and is asynchronous in Lecture. That means that we will NOT meet at any pre-specified time. I will assign readings and videos that you can do at any time that is convenient for you. I will assign activities and discussions that you can do at any time that is convenient for you. This is because we all have disrupted schedules, due to childcare, illness, internet access, sharing laptops, etc. Some of you might even be with your families in other countries, making our regularly scheduled class-time in the middle of the night for you. An asynchronous class will ensure that everyone can learn and participate fully in this trying time. Participation activities will generally be assigned on Monday and do end of day (EOD) Sunday.

The problem with an asynchronous class is that we will not get to meet, to know each other well, or to share ideas in person. In addition, I will not be there in class to look over your shoulder and make sure you've all done your reading on time. This means you'll have to be independent and take your own learning in your hands. There is a lot to learn about social science research and it's exciting. It really is.

While we won't have class time in person or together online, we can still communicate. I will hold a combination of group office hours and individual office hours via Zoom. I encourage you to sign up for my office hours and we can talk via Zoom video conferencing. You can sign up for 10 minute slots during office hours on our canvas website. A document describing how to sign up is under the files tab on canvas. I encourage you to email me at <u>zalmquist@uw.edu</u> and the TAs as needed. Emails are our preferred method of communication (rather than Canvas

messages). I will respond to your email within 72 hours. I encourage you to participate in the class discussion on our canvas website. I will monitor and participate in the canvas discussions. Both TAs will also hold group and individual office hours.

Asynchronous Rhythm

- Lecture Videos will be released Monday Evening
 - I record them Sunday and Monday.
- Reading assignments will be released at the same time.
 - Read Late Work Policy: SOC 225 Late Policy
- All participation activities will be due on Sunday at Midnight.
 - Read Late Work Policy: <u>SOC 225 Late Policy</u>

Office Hours

My office hours are by appointment or at the end of the discussion section. For lecture material your first point of conduct should be me (zalmquist@uw.edu) and for Lab material your first point of contact should be the Teaching Assistants:.

Google Documents

We will make extensive use of Google Drive and google documents.

To log into your UW gmail account to access it. If you have not set it up I recommend going here (<u>Getting Started with UW G Suite | IT Connect</u>). If you have it set up, you simply need to use the NETID SSO <u>http://gmail.uw.edu</u>.

A note about accessibility for grading: You should create a folder that you share with <u>zalmquis@uw.edu</u> where you complete all assignments for the course (e.g. Memos and Reading Responses).

Readings

Weekly readings assignments can be found on the course syllabus. All readings are assumed to be completed before each lecture/seminar. You are expected to read over the class notes each week and make sure you are familiar with the material as the course progresses. Questions are encouraged.

Reading Responses

At the beginning of each week (Monday) I will post a question about the reading for you to write about in the context of the current week's lectures. You will submit each reading response view canvas with a link to a google document at the end of the week (Sunday). Expectation is that each reading response should be around 200-500 words and be relevant to topics and readings of the week. Readings will be graded as 0, 0.5 or 1 score.

Your lowest Reading Response grade will be dropped.

Participation

Individuals are expected to engage with every weekly module, to have completed every reading, and to participate with questions and discussion on each topic as presented. Participation will be graded as 0, 0.5, 1 points: 0 for no attempt, 0.5 for partial work and 1 for full attempt at the activity. Class participation will be based on:

- Data collection tasks (e.g. google forms)
- Data management and analysis (e.g. google sheets)
- Python tutorials through <u>JupyterHub</u>
- Discussion boards
- Occasional individual and small group activities

Your 5 lowest Participation grade will be dropped.

Memos

Over the quarter you will be asked to write three 2-page Business Memos centered around the concepts covered in the course. See <u>Course Calendar</u> for due dates. The memos will be structured as follow:

- 1) Research Design
- 2) Data Collection
- 3) Data Analysis

Your lowest Memo grade will be dropped.

Plagiarism

All memos will be run through <u>SimCheck</u> the University approved plagiarism detection software. The University has a license agreement with SimCheck, an educational tool that helps prevent or identify plagiarism from Internet resources. The SimCheck Report will indicate the amount of original text in your work and whether all material that you quoted, paraphrased, summarized, or used from another source is appropriately referenced.

LAB

Lab Assignments

We will be working through some in-class lab assignments during lab sections. Each assignment will be posted on Canvas on *Friday* and due by the following *Friday* noon. You will submit your work on Canvas to receive participation credit. You will be graded on your

completion (not accuracy) of these assignments. There are **nine** assignments in total. Bonus questions will be given to some assignments.

Your lowest lab assignment will be dropped.

Lab Homework

There are two lab homeworks. They will be due on Canvas. The due dates will depend on how we progress through the lab materials and will be announced on Canvas. To encourage you to learn, homeworks will be graded on both completion and accuracy. For example, you would receive half of the full points for every question you complete, and you will receive full points for every question you complete, please let your Lab instructor know if you turn in late work.

Your lowest lab hw will be dropped.

Extra Credit

Extra Credit of .5% of your grade for a total of 4% of your grade can be obtained by submitting a weekly Multiple Choice Question for "Hypothetical" Multiple choice exam for each Weekly Module.

Grading

Lecture

Base Credit:	1%
Participation:	49%
Reading Responses:	20%
Memos:	30%

Lab

Lab assignments (7)	40%
Lab homework (2)	60%

Lecture and Lab Percentage

Lecture Grade:	60%
Lab Grade:	40%

Final Grade is 0.6*(Lecture)+0.4*(Lab)

Note about grading

Lectures, readings, labs (when relevant), and review sessions are provided for each student's benefit. It is the responsibility of the student to take advantage of these opportunities to acquire and demonstrate mastery of course material, so as to achieve his or her desired grade.

Letter grade assignment

% Points Earned	Number grade	Letter Grade
100-97	4.0-3.9	A
96-90	3.8-3.5	A-
87-89	3.4-3.2	B+
86-84	3.1-2.9	В
83-80	2.8-2.5	B-
79-77	2.4-2.2	C+
76-74	2.1-1.9	С
73-70	1.8-1.5	C-
69-67	1.4-1.2	D+
66-64	1.1-0.9	D
63-60	0.8-0.7	D-
59-0	0	F

Reading

Text Books

- **BB** Matthew Salganik (2017). *Bit by Bit: Social Research in the Digital Age*.
 - Bit By Bit: Social Research in the Digital Age (Free Digital Version)
 - Bit by Bit: Social Research in the Digital Age (Amazon)
- **SB** Sarah Brayne (2021). *Predict and Surveil: Data, Discretion, and the Future of Policing.*
 - Available for **FREE from UW Library** LINK (Requires sign in)
 - Predict and Surveil: Data, Discretion, and the Future of Policing (Amazon)
- **MS** Mario Small (2017). *Someone to Talk to*.
 - Available for **FREE from UW Library** LINK (Requires sign in)
 - <u>Someone To Talk To: How Networks Matter in Practice</u>(Amazon)

- **MK** Michael Kearns and Aaron Roth (2020). *The Ethical Algorithm: The Science of Socially Aware Algorithm Design*.
 - Available for **FREE from UW Library** Link (Requires sign in)
 - <u>The Ethical Algorithm: The Science of Socially Aware Algorithm Design</u> (Amazon)
- **MR** Mathew Rafalow (2020). *Digital Divisions: How Schools Create Inequality in the Tech Era*.
 - Available for **FREE in UW Library** <u>LINK</u> (Requires sign in)
 - <u>Digital Divisions: How Schools Create Inequality in the Tech Era</u> (Amazon)
- **BC** Brian Christian and Tom Griffiths (2016). *Algorithms to Live By: The Computer Science of Human Decisions.*
 - Algorithms to Live By: The Computer Science of Human Decisions (Amazon)

Research Articles/Popular Press/Online Resources

• See weekly readings.

Course Calendar

	DOW	Date	Holidays	Reading Response	Participation	Memo	Readings
		Introductions					
Week 1	Mon	3/29/2022					Readings
	Wed	3/30/2022					
				Data Scienc	e		
Week 2	Mon	4/4/2022					Readings
	Wed	4/6/2022		Due Sunday Midnight			
		Privacy - Overview					
Week 3	Mon	4/11/2022				Memo 1 Available	Readings
	Wed	4/13/2022		Due Sunday Midnight			
				Privacy - Location	Systems		
	Mon	4/18/2022					Readings
Week 4	Wed	4/20/2022		Due Sunday Midnight		Memo 1 Due Sunday Midnight	

			Social N	ledia - Privacy and	Information Pa	ssing	
Week 5	Mon	4/25/2022					Readings
Weeke	Wed	4/27/2022		Due Sunday Midnight			
			Algor	ithms - Overview &	& Decision Mak	ing	
Week 6	Mon	5/2/2022				Memo 2 Available	Readings
	Wed	5/4/2022		Due Sunday Midnight			
				Algorithms	- Bias		
	Mon	5/9/2022					Readings
Week 7	Wed	5/11/2022		Due Sunday Midnight		Memo 2 Due Sunday Midnight	
			Sociologi	cal Inquiry and Big	Data - Citizen S	Science	
Week 8	Mon	5/16/2022					Readings
	Wed	5/18/2022		Due Sunday Midnight			
		So	ciological	Inquiry and Big Da	ta - Overview &	Education	
Week 9	Mon	5/23/2022				Memo 3 Available	Readings
	Wed	5/25/2022		Due Sunday Midnight			
		S	Sociologica	I Inquiry and Big D	oata - Police and	d Prisons	
	Mon	5/30/2022	Memorial Day				Readings
Week 10	Wed	6/1/2022		Due Sunday Midnight		Memo 3 Due Sunday Midnight	
Finals Week							

Lab Assignment Themes

Modules/substantive topics	Data science skills	Data sources	Goals
Introduction: 1) Broad overview; 2) Covid-19	 Intro - Rstudio and Rmarkdown 	Johns Hopkins Covid-19 data: https://systems.jhu.ed u/research/public-hea Ith/ncov/ JHU Raw data:https://coronavir us.jhu.edu/about/how -to-use-our-data Oxford Our World in Data: https://ourworldindata .org/coronavirus Package "coronavirus"	 Getting to know R, Rstudio Open a project file in R Researching a topic you are interested in: find data, interpret patterns, load data into R Knit an Rmarkdown document to html
Data science: 1) data types; 2) sociology of data science; 3) data scientists	 Reading and understanding different types of data with R Modify and exporting data 	Experiment: Tooth growth data: <u>https://stat.ethz.ch/R-manual/R-patched/lib</u> <u>rary/datasets/html/To</u> <u>othGrowth.html</u> Observational: Inside Airbnb data: <u>http://insideairbnb.co</u> <u>m/get-the-data.html</u> (.csv) Survey: Pew Research Center Survey data ¹ [2018 Twitter Survey]: <u>https://www.pewrese</u>	 Describe the sources of datasets Reading different formats of data with R Looking at the data Modify and export data

¹https://medium.com/pew-research-center-decoded/using-tidyverse-tools-with-pew-research-center-surve y-data-in-r-bdfe61de0909

		arch.org/internet/data sets/ (.sav) General social survey: https://github.com/kjh ealy/gssr Package "gssr" Admin: https://cran.r-project. org/web/packages/Ra nkingProject/vignette s/intro.html Just for fun https://towardsdatasci ence.com/without-the ory-data-science-is-ju st-about-cat-memes- 5c3c3948d84f (.jpg)	
Privacy overview: 1) privacy and big data; 2) labor surveillance; 3) case studies	Data wrangling	Covid exposure tracking using cell phone data: <u>https://www.kaggle.co</u> <u>m/deepeddy/cell-pho</u> <u>ne-exposure-tracking</u> <u>https://github.com/CO</u> <u>VIDExposureIndices/</u> <u>COVIDExposureIndic</u> <u>es</u> Case study: re-identification of Governor Weld	 Basics of data wrangling An application of working with cell tracking data to measure covid exposure²³⁴ An case study of data re-identification and anonymization
Privacy location	Visualization -	Inside Airbnb data:	Create

 ² https://www.doh.wa.gov/Emergencies/COVID19/WANotify
 ³ https://www.hrw.org/news/2020/05/13/mobile-location-data-and-covid-19-qa#
 ⁴ https://www.washingtonpost.com/technology/2020/08/17/covid-tracking-apps-cellphones/

Location Systems: 1) privacy by design; privacy by law; privacy ethics; privacy through personal action; 2) self-tracking; spatial data	plotting, mapping geographical data	http://insideairbnb.co m/get-the-data.html Twitter tidygeocoder: https://mjalexander.gi thub.io/social_media_ workshop/	visualizations with colors, facets etc. • Create maps with spatial information
Social media: 1) users, organizers, money, content, communications 2) virality, activism, mis-info, political use	Working with social media data	US Congress members on twitter: <u>https://cdn.raw</u> git.com/pablobarbera/ data-science-worksh op/master/sna/03_ch allenge 1 solutions.h tml ProPublica, Political Advertisements from Facebook: https://www.propublic a.org/datastore/datas et/political-advertisem ents-from-facebook Online Political Ads Transparency Project (NYU): https://github.com/onl ine-pol-ads/FBPolitic alAds/tree/master/Ra wContentFiles	 Political use of social media More data wrangling, manipulating and summarizing data
Algorithms overview: 1) what actually is algorithm; algorithms in everyday digital life; 2) algorithms and data, digital economy; model, Al; algorithms for social research	 Analyzing and embedding Google search and Google Ngrams 	Google trends Google Ngrams Package "gtrendsR" https://www.storyben ch.org/mapping-searc h-data-from-google-tr ends-in-r/	 Get a sense of how algorithms categorize information we see through search and recommendations Example of data caveats
Algorithms decision	 Exploratory data 	User credit behavior	

 overview, cost of fairness, pros and cons, basics of human decision making; data driven algorithms for decision making, how have algorithms changed human, governmental and organizational decision making 	analysis I	prediction: https://www.kaggle.co m/csafrit2/6201-credit -card-loan-analysis	 Descriptive statistics Explore what relates to credit default
Algorithms bias: 1) types of bias; measure bias; evaluate fairness 2) what is bias; facial recognition; case studies	 Exploratory data analysis II 	COMPAS recidivism scores "https://raw.githubuse rcontent.com/propubli ca/compas-analysis/ master/compas-score <u>s-two-years.csv</u> " ; PASSNYC schools data: https://www.kaggle.co m/passnyc/data-scien ce-for-good/home	 Building model to test hypothesis applications of data on algorithms and bias
Social Inquiry and Big Data: Introduction	 Citizen science, crowdsource dataset 	Public Data, e.g. Purple Air <u>https://github.com/Ma</u> <u>zamaScience/AirSen</u> <u>sor</u> https://mazamascienc e.github.io/AirSensor/ articles/articles/Austr alia_on_fire.html	
Social Inquiry: Citizen Science	 Citizen science, crowdsource dataset 	Fitbit data https://www.kaggle.co m/mimosabella/fitnes s-tracker-a-usage-tre nds-analysis-with-r	
Sociological inquiry and big data: overview &	 Working with text data 	gapminder Text analysis with	 Get the basics of working with text data

education: 1) tools for social inquiry; computational social science; prediction 2) how schools create inequality in tech era; case studies		Twitter: https://mjalexander.gi thub.io/social_media_ workshop/	
Sociological inquiry and big data: police and prisons: 1) intro to prison, jails, probation; case studies;	 Correlation and causation 	Stanford Open Policing data: <u>https://openpolicing.st</u> <u>anford.edu/tutorials/</u> <u>https://openpolicing.st</u> <u>anford.edu/tutorials/</u>	 Measure possible racial bias in traffic stops

University of Washington Policies

ACCOMMODATIONS FOR RELIGIOUS ACTIVITIES

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at <u>Religious Accommodations Policy</u>. Accommodations must be requested within the first two weeks of this course using the <u>Religious Accommodations Request form</u>.

DISABILITY ACCESS & ACCO\MMODATIONS:

It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you experience barriers based on disability, please seek a meeting with DRS to discuss and address them. If you have already established accommodations with DRS, please communicate your approved accommodations to

me at your earliest convenience so we can discuss your needs in this course. Disability Resources for Students (DRS) offers resources and coordinates reasonable accommodations for students with disabilities. Reasonable accommodations are established through an interactive process between you, your instructor (me) and DRS. DRS information can be found at: <u>Disability Resources for Students</u>.

SOCIOLOGY DIVERSITY STATEMENT:

The Department of Sociology at the University of Washington values <u>diversity</u>, <u>equality</u>, <u>and inclusivity</u> in our community. We realize these goals in our classrooms by questioning assumptions in our texts, discussions, and our own thinking, and by holding all members of our community to the highest standards of respectful and open communication, as laid out in the <u>UW Student Conduct Code</u>.

ACADEMIC INTEGRITY

See <u>Student Conduct Code | Community Standards & Student Conduct</u> for crucial information regarding academic integrity. The library also has an extremely useful website with resources at <u>Library Guides: Academic Integrity and Plagiarism Prevention</u> <u>Resources: Academic Integrity & Plagiarism</u>. You are responsible for knowing what constitutes a violation of the University of Washington Student Code, and you will be held responsible for any such violations whether they were intentional or not. A clear list of rules and examples of violations can be found here: <u>Student Academic Responsiblity</u>

MANDATORY REPORTING STATEMENT

* CAUTION! Please note that we are mandatory reporters, which means that we may be required to report it to the University if you share with me experiences of past abuse or plans to harm yourself and others.

UW Student Resources

STUDENT RESEARCH RESOURCES:

- Libraries: University of Washington Libraries
- Center for Statistics and the Social Sciences (CSSS): <u>Home | Center for Statistics</u> and the Social Sciences
- Center for Social Science Computation and Research (CSSCR): <u>The Center for</u> <u>Social Science Computation and Research</u> Center for Studies in Demography and Ecology (CSDE): <u>Computing</u>

UW WRITING CENTERS

- Sociology Writing Center (open to all students enrolled in this course): SAV 203; Sociology Writing Center 206.221.0972
 Students who want to make an appointment should email writesoc@uw.edu.
 Students may also make appointments by calling or visiting the Advising Office.
- Odegaard Writing and Research Center (open to all students) : <u>Odegaard</u> <u>Undergraduate Library — UW Libraries</u>. Phone 206.221.0972 and 206.543.5396.
- Center for Undergraduate Learning and Education (CLUE): email <u>clue@uw.edu</u> <u>This Week at CLUE: UW Academic Support Programs</u>.

OTHER STUDENT SUPPORT SERVICES:

Dispute Resolution and Bias Reporting Supports

- Office of the Ombud: Office of the Ombud 206-543-6028
- Bias Report (for incidents of bias in any form): Report Bias
- Community Standards & Student Conduct: Making a report | Community Standards
 & Student Conduct
- Title IX/ADA Coordinator if complaint is related to disability accommodation, sex/gender discrimination, or sexual harassment (Title IX): (scroll down to bottom of page to "Grievance Procedures & Barrier Reporting") <u>Policy, law and reporting [</u> <u>Compliance</u>

Financial Assistance

- Emergency Aid: <u>Seattle | Emergency Aid</u>
- Office of Student Financial Aid: <u>Contact us | Student Financial Aid</u>
- Short Term Emergency Loans: <u>Short-term loans | Student Financial Aid</u>
- Campus Food Pantry: <u>Get-Food</u>
- Housing Assistance: Other assistance | Student Financial Aid
- Mental Health Supports
- Health and Wellness office: LiveWell Center for Student Advocacy, Training, and Education 206.543.6085
- Hall Health: <u>http://depts.washington.edu/hhpccweb/</u>
- Hall Health Mental Health: Hall Health
- Counseling Center: About the Counseling Center | Counseling Center
- Resources Re: Sexual / Relationship Trauma:* <u>Sexual Assault Resources</u>

Building Community

- Office of Minority Affairs & Diversity: Office of Minority Affairs & Diversity
- Samuel E. Kelly Ethnic Cultural Center: Samuel E. Kelly Ethnic Cultural
- Q Center (for Queer community, including Questioning): <u>Q Center</u>
- Intellectual House (for Indigenous community): wəłəb?altxw – Intellectual House | Diversity at the UW
- International Student Center: International Student Services International Student
 ServicesInternational Student Services
- Deaf and Disability Cultural Center (D Center): HUB 327 <u>D Center at the University</u>
 <u>of Washington</u>
- Undocumented Student Resources:
 <u>Undocumented student resources | Admissions</u>

Technology Supports (and remote learning related supports)

• *IT Connect* (tech support services for students): <u>Teaching and Learning Tools</u>

- Internet connection and free wifi hotspots (enabled during COVID-19 outbreak) Internet connectivity for learning, teaching and working remotely
- Laptop Loans Remember that through the technology fees that you pay you can reserve a laptop if you need to! Laptops for takeout or delivery: Student technology program readies for spring quarter
- Online Academic Success Coaching: <u>Success Coaching: UW Academic Support</u>
 <u>Programs</u>
- Online Study Skills Resources: (e.g. time management) <u>Study Skills: UW Academic</u> <u>Support Programs</u>
- Video on preparing for online learning: <u>https://vimeo.com/4012001600</u>