Sociology 190
Algorithms in Society
Fall 2019

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Seminar meetings: Mondays, 4-6 PM   175 Barrows Hall
Office hours: Mondays, 12-2 PM   483 Barrows Hall

Sociologists frequently study how people and things are sorted into different categories according to race, gender, income, education, political allegiance, or criminal records. In the contemporary world, such classification often relies on technologies that process large amounts of behavioral, economic, or demographic data to determine credit scores, calculate the recidivism risk of criminal defendants, structure access to welfare services, allocate police officers to urban neighborhoods, write and curate news, personalize shopping recommendations, determine prices and driving directions, or select matches on dating websites. Each of us is examined by countless algorithms every day, often without realizing it.

Despite their prevalence and significance, algorithmic technologies are commonly relegated to the domain of computer science and regarded as inscrutable pieces of software. Yet they are not just complex technological objects: Algorithms have social histories and tangible consequences in the world. They affect the structure of the social order, facilitate market exchanges, influence politics, and shape our sense of self. They can be studied with the tools of sociology; and studying them sociologically can illuminate the intricate links between technology and society.

In this course, we will (1) explore the links between technology and familiar sociological topics like power, race, gender, and capitalism and (2) familiarize ourselves with sociological theories that aim to make sense of such links. The course does not assume any specific technical knowledge.

Course readings

All course readings will be provided in electronic form on bCourses or as links in this syllabus. You do not need to purchase any books. Some readings will inevitably touch on technical aspects of computation or dip into philosophical debates about human agency — but **technical and philosophical knowledge is neither a prerequisite nor a focus** of this course. I will try to guide you through difficult passages during our seminar meetings.

Seminar meetings and attendance policy

We will meet once a week for two hours. Please be prepared to discuss, compare, and critique the course readings. I will sometimes give brief lectures to orient our discussion and clarify difficult readings, but the focus will be on a free and frank exchange of ideas. I will facilitate those discussions and ensure that we cultivate a learning environment where everyone's voice is heard.

Students have different participation styles, and we will change the format of our discussions to allow for different forms of engagement. But if you find it difficult to speak in class, I encourage you to meet with me individually. I can help you to speak with greater confidence.

Please inform me in advance if you cannot attend class. I will deduct participation points if you miss more than two seminars.

Assignments and grading

This seminar is organized around weekly discussions and culminates in an independent research paper. The assignments are designed to facilitate those discussions and to aid your paper-writing. All assignments are double-spaced and should be submitted on bCourses.

Assignment	Description	Due Date	Weight
Attendance and participation	I expect you to attend our seminar meetings and to contribute actively to classroom discussions.		30%
4 reading response memos	1-2 page memos that discuss the week's readings. You can turn in these memos during any week, as long as they are all submitted prior to RRR week. Please upload your memos to bCourses on Sunday evening. I will read them before we meet on Monday and might ask you to discuss your memo during class.	Sundays, 8pm	5% per memo
Paper prep 1: Case selection and data	1-2 pages about an algorithm or a platform of your choice. Why do you find it sociologically interesting? How would you study it? Where would you find data?	October 14, before class	5%
Paper prep 2: Preliminary findings	2-3 pages about your preliminary findings. What have you learned about your case? Summarize your data — I don't expect any analysis or theory in this memo.	November 4, before class.	5%
Paper prep 3: Theory	1-2 pages about concepts and theories. Choose two or three readings and discuss how they might illuminate your case. If you want to use outside theories, please come to office hours to discuss them.	November 18, before class	5%
Paper prep 4: Outline	2-3 pages with a summary of your argument. This should provide a detailed overview of your paper's structure, data, argument, and tentative conclusions.	November 25, before class	5%
Final paper	15-20 pages about an algorithm or a platform of your choice. I expect you to (1) identify why this technology/platform has sociological relevance, (2) describe in appropriate detail how it operates and what consequences it has in the social world, and (3) analyze it sociologically. This will require you to do some independent empirical research, although I encourage you to rely on books and articles from this syllabus to make theoretical claims.	December 13, midnight	30%

E-Mail and Office Hours

I can easily be reached by email. While I'll do my best to reply quickly, sometimes my work will prevent me from getting to your emails as promptly as I'd like. Fear not: A response is coming!

You can also sign up for my weekly office hours at *wejoinin.com/eiermann*. Send me an email to request a separate meeting if you cannot meet during my regular office hours and I will do my best to accommodate you. You do not need a set of fully formed questions to attend office hours. If you find a reading particularly interesting, if you want guidance on an assignment, or if you are hesitant to speak in class and prefer a more individualized setting, I hope that you will come to see me.

Disabled Students Program

If you have a documented need for special accommodations, please forward your DSP letter as soon as possible to work out the necessary arrangements.

Academic honesty

You must submit original work, cite your sources, and in no way misrepresent your work or the work of your peers. If you are unsure what constitutes cheating or plagiarism, please familiarize yourself with Berkeley's code of student conduct at *sa.berkeley.edu/student-code-of-conduct*. Remember that it is always better to hand in an incomplete assignment or to ask for an emergency extension than to submit dishonest or plagiarized work.

Campus Resources

Student Leaning Center: Located in the Cesar Chavez Student Center, the SLC offers academic support through tutoring, study groups, and workshops. Contact them at 510-642-7332.

Counseling and Psychological Services: Mental health resources are available through University Health Services. Contact the Tang Center at 510-642-9494 or after hours at 855-817-5667.

Social Services: Located at the Tang Center, the office provides confidential services and counseling to help students with financial, academic, legal, and family problems, substance abuse, pregnancy, and sexual violence. Contact them at 510-642-6074.

Weekly calendar and readings

Part I: Technology and the social order — We situate technologies in their social environments and examine how algorithms reflect, reinforce, or reorder social hierarchies.

September 2: LABOR DAY — NO CLASS.

September 9: Algorithms and society

- *What can social science contribute to the study of technology?*
- *What does it mean to think of algorithms as black boxes?*

Fourcade, Marion. 2016. "Ordinalization: Lewis A. Coser Memorial Award for Theoretical Agenda Setting 2014." *Sociological Theory* 34 (3): 175–195.

Bowker, Geoffrey C., and Susan Leigh Star. 1999. "To Classify is Human." Pp. 1-32 in *Sorting Things Out: Classification and Its Consequences.* Cambridge: MIT Press.

Bucher, Taina. 2018. "Programmed Sociality." Pp. 1-18 in *If... Then: Algorithmic Power and Politics*. Oxford: Oxford University Press.

Pasquale, Frank. 2015. "The Need to Know." Pp. 1-18 in *The Black Box Society: The Secret Algorithms That Control Money and Information*. Cambridge: Harvard University Press.

September 16: Do algorithms have politics?

- *How can the design of platforms and algorithms be "political" in itself? This week, we encounter four perspectives on this question that respectively emphasize the fundamental design of technological systems, the practical choices made by systems designers, the theories that inform the operations of such systems, and the concrete interests of businesses.*

Winner, Langdon. 1980. "Do Artifacts Have Politics?" *Daedalus* 109 (1): 121–136.

Allen, Marshall. "Health Insurers Are Vacuuming Up Details About You — And It Could Raise Your Rates." *ProPublica*, July 17, 2018. Available at: https://www.propublica.org/article/health-insurers-are-vacuuming-up-details-about-you-and-it-could-raise-your-rates.

MacKenzie, Donald. 2006. "Performing Theory?" Pp. 1-35 in *An Engine, Not A Camera.* Cambridge: The MIT Press.

Noble, Safiya Umoja. 2018. "A Society, Searching." Pp. 15-63 in *Algorithms of Oppression*. New York: NYU Press.

September 23: Biased inputs and the power of feedback loops

- *What are feedback loops, and why do they matter?*
- *If you have never encountered terms like "training dataset" before (that's okay!!!), take a quick look at this primer before you do the readings: https://elitedatascience.com/model-training.*

Lum, Kristian and William Isaac. 2016. "To predict and serve?" *Significance*, pp. 14 – 18.

Angwin, Julia et al. "Machine Bias." *ProPublica,* May 23 2016. Available at: https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing.

Bolukbasi, Tolga, Kai-wei Chang, James Zou, Venkatesh Saligrama, and Adam Kalai. 2016. "Man Is to Computer Programmer as Woman Is to Homemaker? Debiasing Word Embeddings." In *30th Conference on Neural Information Processing Systems:* 1–9.

Dastin, Jeffrey. "Amazon scraps secret AI recruiting tool that showed bias against women." *Reuters*, October 9, 2018. Available at: https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G.

September 30: Algorithmic outputs and the imposition of social order

- *How is economic behavior at the individual level related to social order at the aggregate level?*
- *What is "emergent bias", and how does it relate to the issues we discussed in prior weeks?*

Eubanks, Virginia. 2017. "The Allegheny Algorithm." Pp. 127-173 in *Automating Inequality*. New York: St. Martin's Press.

Aitken, Rob. 2017. "All Data Is Credit Data: Constituting the Unbanked." *Competition & Change* 21 (4): 274–300.

Rosenblat, Alex, Karen Levy, Solon Barocas, Tim Hwang. 2017. "Discriminating Tastes: Uber's Customer Ratings as Vehicles for Workplace Discrimination." *Policy and Internet* 9 (3): 253-264.

Friedman, Batya, and Helen Nissenbaum. 1996. "Bias in computer systems." *ACM Transactions on Information Systems 14 (3)*: 330-347.

October 7: Human labor and machine labor

- *What is the relation between algorithms and human labor?*

- *Does a greater reliance on computation imply the absence of ideology?*

Chun, Wendy Hui Kyong. 2008. "On 'Sourcery', or Code as Fetish." *Configurations*, 16 (3): 299-324.

Daston, Lorraine. "Calculation and the Division of Labor, 1750-1950." 31st Annual Lecture of the German Historical Institute. Washington, DC, November 9 2017.

Autor, David H. 2015. "Why Are There Still So Many Jobs? The History and Future of Workplace Automation." *Journal of Economic Perspectives*, 29 (3): 3-30.

Hern, Alex. "Apple contractors 'regularly hear confidential details' on Siri recordings." *The Guardian*, July 26, 2019. Available at: https://www.theguardian.com/technology/2019/jul/26/apple-contractors-regularly-hear-confidential-details-on-siri-recordings.

Part II: Algorithmic societies — We consider what it means to live in a world where algorithms are pervasive and where data has become an important commodity.

October 14: Algorithms and the self

- *What is unique about "soft biopolitics"?*
- *How is our sense of self affected by technology?*

Cheney-Lippold, John. 2011. "A New Algorithmic Identity: Soft Biopolitics and the Modulation of Control." *Theory, Culture & Society* 28 (6): 164-181.

Hacking, Ian. 1985. "Making up people." Pp. 161-171 in *Reconstructing Individualism,* edited by T. L. Heller, M. Sosna and D. E. Wellbery. Stanford: Stanford University Press.

Summers, Christopher A., Robert W. Smith, Rebecca W. Reczek. 2016. "An Audience of One: Behaviorally Targeted Ads as Implied Social Labels." *Journal of Consumer Research* 43 (1): 156-178.

Schüll, Natasha Dow. 2017. "Digital containment and its discontents." *History and Anthropology* 29 (1): 42-48.

PLEASE SUBMIT YOUR PAPER TOPIC IDEAS (1-2 PAGES)!

October 21: Algorithms and markets

- *How do markets "see" customers and clients?*
- *Which financial logics underpin credit ratings or dynamic pricing?*

Fourcade, Marion, and Kieran Healy. 2017. "Seeing like a Market." *Socio-Economic Review* 15 (1): 9-29. Available at: https://kieranhealy.org/files/papers/slam-2.pdf.

Carruthers, Bruce G. 2013. "From Uncertainty toward Risk: The Case of Credit Ratings." *Socio-Economic Review* 11 (3): 525–551.

Stark, Luke, and Karen Levy. 2018. "The surveillant consumer." *Media, Culture & Society* 40 (8): 1202–1220.

October 28: Data capitalism

- *What is a "fictitious commodity"?*
- *How does the commodification of data affect algorithm design and user experiences?*

Zuckerman, Ethan. "The Internet's Original Sin." *The Atlantic*, August 14 2014.

Jessop, Bob. 2007. "Knowledge as a fictitious commodity: insights and limits of a Polanyian perspective." Pp. 115-133 in *Reading Karl Polanyi for the twenty-first century*. New York: Palgrave Macmillan.

Zuboff, Shoshana. 2019. "The Elaboration of Surveillance Capitalism." Pp. 128-175 in *The Age of Surveillance Capitalism*. New York: Public Affairs.

November 4: Algorithms and the state

- *How do people become knowable and known to the state?*
- *How have state practice and state knowledge changed in the twenty-first century?*

Scott, James. 1999. "Cities, People, and Language." Pp. 53-83 in *Seeing Like A State*. New Haven: Yale University Press.

Igo, Sarah. 2018. "Documents of Identity." Pp. 55-98 in *The Known Citizen*. Cambridge: Harvard University Press.

Sarah Brayne. 2017. "Big Data Surveillance. The Case of Policing." *American Sociological Review* 82 (5): 977–1008.

PLEASE SUBMIT YOUR PRELIMINARY FINDINGS (2-3 PAGES)!

November 11: VETERANS' DAY — NO CLASS

November 18: Data and democracy

- *How is the political system affected by technology?*
- *Social media algorithms often optimize for user engagement. What are consequences of, and alternatives to, this logic?*

O'Neil, Cathy. 2016. "The Targeted Citizen." Pp. 179-197 in *Weapons of Math Destruction*. New York: Random House.

Kobie, Nicole. "The complicated truth about China's social credit system." *WIRED Magazine*, June 7, 2019. Available at: https://www.wired.co.uk/article/china-social-credit-system-explained

Lewis, Paul. "Fiction is outperforming reality: How YouTube's algorithm distorts truth." *The Guardian*, February 2 2018. Available at: https://www.theguardian.com/technology/2018/feb/02/how-youtubes-algorithm-distorts-truth.

Tufekci, Zeynep. 2014. "Engineering the Public: Big Data, Surveillance and Computational Politics." *First Monday* 19 (7). Available at: http://firstmonday.org/ojs/index.php/fm/article/view/4901/4097.

PLEASE SUBMIT YOUR THEORY MEMOS (1-2 PAGES)!

November 25: Law and culture as midwives of change

- *We zoom out and consider the broad cultural and legal frameworks that can facilitate technological change, or can redirect the path of technological evolution*
- *Can you identify the cultural and legal prerequisites for a particular algorithm or platform?*

Barbrook, Richard, and Andy Cameron. 1996. "The Californian Ideology." *Science as Culture* 6 (1): 44-72.

Finn, Ed. 2018. "Counting Bitcoin." Pp. 151-179 in *What Algorithms Want: Imagination in the Age of Computing*. Cambridge: MIT Press.

Lessig, Lawrence. 2006. *Code Version 2.0*. New York: Basic Books. Pp. 31-60.

PLEASE SUBMIT YOUR OUTLINES (2-3 PAGES)!

December 2: Concepts for an algorithmic age

- *We consider various theories that aim to make sense of the possibilities and challenges of technology.*
- *Recall the concepts we have already encountered, e.g. black boxes/performativity/data commodification/biopower/algorithmic selves/programmed sociality. Which do you find most useful for making sense of the present world?*

Haraway., Donna. 1990. "A Cyborg Manifesto. Science, Technology, and Socialist Feminism in the Late Twentieth Century." Pp. 65-107 in *Simians, Cyborgs and Women: The Reinvention of Nature*. New York: Routledge.

Koopman, Colin. 2019. "Toward a Political Theory for Informational Persons." Pp. 153-172 in *How We Became Our Data: A Genealogy of the Informational Person*. Chicago: The University of Chicago Press.

Gillespie, Tarleton. 2013. "The Relevance of Algorithms." Pp. 167-194 in *Media Technologies*, edited by Tarleton Gillespie, Pablo Boczkowski, and Kirsten Foot. Cambridge: MIT Press.

Whitley, Edgar A. 2009. "Informational privacy, consent and the ''control'' of personal data." *Information Security Technical Report* 14: 154–159.