

The Politics of Algorithms

COMM 154-254 / SOC 154 / CSRE 154T

Fall 2019

T/Th, 3-4:20pm

School of Education 128

Prof. Angèle Christin

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Office hours: Wednesday 3:30-5:30pm

Rm 334 Building 120

Teaching Assistants:

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Course description

Algorithms have become central actors in today's digital world. In areas as diverse as social media, journalism, education, healthcare, and policing, computational technologies increasingly mediate decision and communication processes. This course will provide an introduction to the social and cultural forces shaping the construction, institutionalization, operation, and uses of algorithms. In so doing, we will explore how algorithms relate to political issues of modernization, power, democratic debate, and inequality. Readings will range from social scientific analyses to media coverage of ongoing controversies relating to big data. Students will leave the course with a better appreciation of the broader challenges associated with researching, building, and using algorithms.

Learning goals

- Students will be able to identify content, interactions, and behaviors that have been shaped by algorithms
- Students will be able to recognize and critically analyze the values and goals informing the construction of algorithms
- Students will be able to explain the different mechanisms through which algorithms reproduce and sometimes reinforce differences between groups
- Students will be able to apply these mechanisms in analyzing other computational techniques not covered in the course

Requirements and grading

Please note that the assignments are *not* the same at the Undergraduate (Comm 154/Soc 154/ CSRE 154T) and Graduate levels (Comm 254).

Comm 154 / Soc 154 / CSRE 154T (Undergraduate Level)

1. Write *three short reading responses* about the readings (approximately 300 words altogether, due on Wednesdays by 8pm, on Canvas in the “discussion” page for your section). The format for these responses can vary, but it is useful to include short descriptions of the main ideas, concepts, and arguments that you found stimulating, as well as your questions, concerns, or disagreements. The responses must conclude with a couple of questions to open up the discussion during sections. You will sign up for the dates of your three responses during the first section meeting.
2. A *midterm paper* (hard copy due on Oct. 24 in class). You will be asked to choose among several possible topics and write an essay of approximately 1,000 words. You will draw on the course readings and class discussions to develop a focused argument in response to an assigned question.
3. A *final paper* (hard copy due on Dec. 5 in class). You will be asked to choose among several possible topics and write an essay of approximately 1,500 words. The questions will ask you to synthesize course readings and link them to new issues or objects.

Grades will be determined based on the written assignments and course participation. The breakdown will be the following:

- Reading response posts and questions: 15%
- Class participation 15%
- Midterm paper: 30%
- Final paper: 40%

Your papers need to be submitted on time and should represent your best work at every level. Work submitted late or with errors of fact, grammar or spelling will be penalized. The Honor Code applies to all your work.

Comm 254 (Graduate Level)

1. Write *three reading response posts on the optional readings*. Graduate students taking the course will be expected to read (and cover in your reading responses) two of the “optional” readings each time in addition to the required ones. The reading responses will connect the optional readings to the mandatory readings (approximately 400 words, due by 8pm Wednesday, on Canvas, in the “discussion” section for your section).
2. A *midterm paper* (hard copy due on Oct. 24 in class). You will be asked to choose among several possible topics and write an essay of approximately 1,500 words. You will draw on the course readings and class discussions to develop a focused argument in response to an assigned statement.
3. For the *final paper* (hard copy due on Dec. 5 in class), students will be asked to choose among several possible topics and write an essay of approximately 2,000 words. The questions will ask you not only to synthesize course readings and link them to issues or objects discussed in class, but also to develop an original, rigorous argument based on several of the theoretical readings examined in class and supported by a variety of empirical examples.
4. Graduate students can attend weekly section meetings (optional).

Grades will be determined based on the written assignments and course participation. The breakdown will be the following:

- Blog posts: 20%
- Class participation: 10%
- Midterm paper: 30%
- Final paper: 40%

PhD Students: please contact Prof. Christin by email (angelec@stanford.edu) at the beginning of the quarter for further instructions on assignments.

Grading scale

A	93-96
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72

Readings

The readings will be made available on Canvas.

Cell Phones, Laptops, Tablets, and other Electronic Devices

Please turn off all electronic means of communication for the duration of class. See Clay Shirky's "[Why I Just Asked My Students to Put Their Laptops Away](#)" as well as Pam A. Mueller and Daniel M. Oppenheimer. 2014. "[The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking](#)," *Psychological Science*, 25 (6).

Respect privacy and do not make digital recordings of others without their consent

Digital recordings and privacy concerns will be a recurring topic as we discuss present day media processes and effects. It is essential to the success of this class that participants feel comfortable sharing questions, ideas, concerns, stories, and experiences during class discussions. Therefore, you may not create any audio, photographic, or video recordings during class time.

Students with Documented Disabilities

Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty dated in the current quarter in which the request is being made. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 723-1066, URL: <http://studentaffairs.stanford.edu/oea>).

Well-Being, Stress Management, & Mental Health

If you are experiencing personal, academic, or relationship problems and would like someone to talk to, reach out to the Counseling and Psychological Services (CAPS) on campus. CAPS is the university's counseling center dedicated to student mental health and wellbeing. As specialists working with undergraduate and graduate students, CAPS staff will work to address your needs through an initial CAPS phone screen appointment. CAPS provides a broad range of services including: crisis counseling, individual therapy, medication assessment and management, and group therapy. These services are provided by a diverse and multicultural professional staff. Many services are available without additional charge for students who have paid the Campus Health Service Fee. Phone assessment appointments can be made at CAPS by calling 650-723-3785, by accessing the VadenPatient portal through the Vaden website, or by coming to the second floor of the Vaden Health Center from 8:30 am–5 pm Monday through Friday. For more information about CAPS services, visit: <https://vaden.stanford.edu/caps-and-wellness>

Week 1. September 24-26. Introduction. What are algorithms? Do they have politics?

September 24

“A Visual Introduction to Machine Learning.” R2D3.

““Ally” Extension Created For Students Navigating AXESS Enrollment.” *Stanford Daily*, Feb. 14, 2019

September 26

O’Neil, Cathy. 2016. Introduction and Chapter 1 in *Weapons of Math Destruction*. Crown.
Winner, Langdon. 1980. “Do Artifacts Have Politics?” *Daedalus* 109(1): 121-136.

Optional

Daumé III, Hal. 2017. Chapter 1 in *A Course in Machine Learning*.

boyd, danah and Kate Crawford. 2012. “Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon.” *Information, Communication, & Society* 15 (5): 662-679.

Joerges, Bernward. 1999. “Do Politics Have Artefacts?” *Social Studies of Science* 29 (3): 411-431.

Woolgar, Steve, and Geoff Cooper. 1999. “Do Artefacts Have Ambivalence?” *Social Studies of Science* 29 (3): 433-449.

Week 2. October 1-3. Facebook, Filter Bubbles, and the Public Sphere

October 1

Pariser, Eli. 2011. Introduction and Chapter 1 in *The Filter Bubble: How the New Personalized Web is Changing What We Think and How We Read*. Penguin.

Habermas, Jurgen. 1989. Pp. 27-43 in *The Structural Transformation of the Public Sphere: An Inquiry into the Category of Bourgeois Society*. MIT Press.

Keegan, John. 2019. “Blue Feed, Red Feed: See Liberal Facebook and Conservative Facebook Side by Side.” *The Wall Street Journal*.

October 3 * Guest Lecture by Becca Lewis *

Fraser, Nancy. 1990. “Rethinking the Public Sphere.” *Social Text* 25/26: 56-80.

Tufekci, Zeynep. 2018. “YouTube, the Great Radicalizer.” *The New York Times*, March 10, 2018.

Rebecca Lewis. 2018. “Alternative Influence: Broadcasting the Reactionary Right on YouTube.” Data & Society Research Institute.

Gillespie, Tarleton. 2010. “The Politics of ‘Platforms.’” *New Media & Society* 12 (3): 347–64.

Optional

Bakshy, Eytan, Solomon Messing, and Lada A. Adamic. 2015. “Exposure to Ideologically Diverse News and Opinion on Facebook.” *Science* 348 (6239)

Flaxman, Seth, Sharad Goel, and Justin M. Rao. 2016. “Filter Bubbles, Echo Chambers, and Online News Consumption.” *Public Opinion Quarterly* 80 (S1): 298-320.

Allcott, Hunt, and Matthew Gentzkow. 2017. “Social Media and Fake News in the 2016 Election.” *Journal of Economic Perspectives* 31(2): 211-236.

Ribeiro, Manoel Horta, Raphael Ottoni, Robert West, Virgilio A. F. Almeida, Wagner Meira Jr. 2019. “Auditing Radicalization Pathways on YouTube.” In Woodstock ’18: ACM Symposium on Neural Gaze Detection, June 03–05, 2018, Woodstock, NY. ACM, New York, NY, USA.

Week 3. October 8-10. Privacy and Surveillance

October 8

Solove, Daniel J. 2015. “Why Privacy Matters Even if You Have ‘Nothing to Hide.’” *The Chronicle of Higher Education*.

Foucault, Michel. 1975. Chapter 3 in *Discipline and Punish: The Birth of the Prison*. Vintage.

Hill, Kashmir. 2019. “I Cut the ‘Big Five’ Tech Giants From My Life. It Was Hell.” *Gizmodo*, Feb. 7, 2019.

Levy, Karen, and Solon Barocas. 2018. “Refractive Surveillance. Monitoring Customers to Manage Workers.” *International Journal of Communication* 12: 1166-1188.

October 10 * Guest Lecture by Shazeda Ahmed *

Chin, Josh, and Clément Bürge. 2017. “Twelve Days in Xinjiang.” *Wall Street Journal*, Dec. 19, 2017.

Ahmed, Shazeda. 2019. “The Messy Truth About Social Credit.” *Logic*: 08.

Madden, Mary, Michele Gilman, Karen Levy, and Alice Marwick. 2017. “Privacy, Poverty, and Big Data: A Matrix of Vulnerabilities for Poor Americans.” *Washington University Law Review* 95: 53-125.

Optional

- Agre, Philip E. 1994. "Surveillance and Capture. Two Models of Privacy." *The Information Society* 10(2): 101-127.
- Nissenbaum, Helen. 2011. "A Contextual Approach to Privacy Online." *Daedalus* 140(4): 32-48.
- Zuboff, Shoshana. 2015. "Big Other: Surveillance Capitalism and the Prospects of an Information Civilization." *Journal of Information Technology* 30(1): 75-89.
- Deleuze, Gilles. 1992. "Postscript on the Societies of Control." *October* 59: 3-7.

Week 4. October 15-17. Algorithmic Discrimination and Inequality

October 15

- Sweeney, Latanya. 2013. "Discrimination in Online Ad Delivery." *ACM Queue* 11(3): 1-19.
- Buolamwini, Joy, and Timnit Gebru. 2018. "Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification." *Proceedings of Machine Learning Research* 81:1-15. Conference on Fairness, Accountability, and Transparency.
- Noble, Safiya Umoja. 2018. Chapter 1 in *Algorithms of Oppression. How Search Engines Reinforce Racism*. New York: NYU Press.

October 17

- Marzano-Lesnevich, Alex. 2019. "Flying While Trans." *The New York Times*, April 17, 2019.
- Hicks, Marie. 2019. "Hacking the Cis-term." *IEEE Annals of the History of Computing* 41(1): 20-33.
- Eubanks, Virginia. 2017. Introduction and Chapter 2 in *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*. St Martin's Press.

Optional

- Braun, Lundy. 2005. "Spirometry, Measurement, and Race in the Nineteenth Century," *Journal of the History of Medicine and Allied Sciences* 60 (2): 135-69.
- Baker, Paul, and Amanda Potts. 2013. "'Why Do White People Have Thin Lips?' Google and the Perpetuation of Stereotypes via Auto-Complete Search Forms." *Critical Discourse Studies* 10 (2): 187-204.
- Crawford, Kate, and Jason Schultz. 2014. "Big Data and Due Process: Toward a Framework to Redress Predictive Privacy Harms." *Boston College Law Review*, 55(1).
- Fourcade, Marion, and Kieran Healy. 2016. "Seeing Like a Market." *Socio-Economic Review* 1-21.

Week 5. October 22-24. The Case of Criminal Justice

October 22

- Lum, Kristian, and William Isaac. 2016. "To Predict and Serve?" *Significance*, October 7, 2016.
- Brayne, Sarah. 2017. "Big Data Surveillance: The Case of Policing." *American Sociological Review* 82(5): 977-1008.
- Goel, Sharad, Maya Perelman, Ravi Shroff, and David Alan Sklansky. 2017. "Combatting Police Discrimination in the Age of Big Data." *New Criminal Law Review* 20(2): 181-232.

October 24

- Angwin Julia, Larson Jeff, Mattu Surya, and Krichner Lauren. 2016. Machine Bias. *ProPublica*, May 23, 2016.
- Corbett-Davis, Sam, Pierson, Emma, Feller, Avi and Goel, Sharad. 2016. “A Computer Program Used for Bail and Sentencing Decisions Was Labeled Biased Against Blacks. It’s Actually Not That Clear.” *The Washington Post*. October 17, 2016.
- Simonite, Tom. 2019. “Algorithms Shoud’ve Made Courts More Fair. What Went Wrong?” *Wired*, September 5, 2019.
- Christin, Angèle. 2017. “The Mistrials of Algorithmic Sentencing.” *Logic 03: Justice*.

Optional

- Pasquale, Frank. 2015. Chapter 1 and 2 in *The Black Box Society: The Secret Algorithms That Control Money and Information*. Harvard University Press.
- Barocas Solon, and Selbst Andrew D. 2016. “Big Data’s Disparate Impact.” *California Law Review* 104: 671-732.

-- Midterm Paper Due in Class on October 24 --

Week 6. October 29-31. Algorithmic Identities

October 29

- Goffman, Erving. 1959. Pp. 1-34 in *The Presentation of Self in Everyday Life*. New York: Doubleday.
- Marwick, Alice E., and boyd, danah. 2011. “I Tweet Honestly, I Tweet Passionately: Twitter Users, Context Collapse, and the Imagined Audience.” *New Media & Society*, 13(1): 114-133.
- Duffy, Brooke Erin, and Emily Hund. 2015. “‘Having it All’ on Social Media: Entrepreneurial Femininity and Self-Branding Among Fashion Bloggers.” *Social Media + Society* 1-15.
- Bishop, Sophie. 2019. “Managing Visibility on YouTube through Algorithmic Gossip.” *New Media & Society*, Online First.

October 31

- Poulsen, Kevin. 2014. “How a Math Genius Hacked OkCupid to Find True Love.” *Wired*, January 21, 2014.
- Illouz, Eva. 2007. “Romantic Webs” in *Cold Intimacies: The Making of Emotional Capitalism*. Polity.
- Krüger, Steffen, and Ane C. Spilde. 2019. “Judging Books by Their Covers – Tinder Interface, Usage and Sociocultural Implications.” *Information, Communication & Society* 1-16.

Optional

- Crawford, Kate, Lingel, Jessa, and Karppi, Tero. 2015. “Our Metrics, Ourselves. A Hundred Years of Self-Tracking from the Weight Scale to the Wrist Wearable Device.” *European Journal of Cultural Studies* 18(4-5): 479-496.

- Igo, Sarah. 2007. Introduction and Chapter 6 in *The Averaged American*. Cambridge, MA: Harvard University Press.
- Bucher, Taina. 2016. "The Algorithmic Imaginary: Exploring the Ordinary Affects of Facebook Algorithms." *Information, Communication & Society* 20(1): 30-44.

Week 7. November 5-7. Algorithmic Work

November 5

- Merchant, Brian. 2019. "Why Self-Checkout Is and Has Always Been the Worst." *Gizmodo*, March 7, 2019.
- Taylor, Astra. 2018. "The Automation Charade." *Logic* (5): Failure.
- Shestakofsky, Benjamin. 2017. "Working Algorithms: Software Automation and the Future of Work." *Work and Occupations* 44(4):376-423.
- Rosenblat, Alex and Stark, Luke. 2016. "Algorithmic Labor and Information Asymmetries. A Case Study of Uber Drivers." *International Journal of Communication* 10: 3758-3784.

November 7

- Chen, Julie Yujie. 2018. "Thrown Under the Bus and Outrunning It! The Logic of Didi and Taxi Drivers' Labour and Activism in the On-Demand Economy." *New Media & Society* 20(8): 2691-2711.
- Christin, Angèle. 2018. "Algorithms in Practice: Comparing Web Journalism and Criminal Justice." *Big Data & Society* 4(2): 1-14.
- Sachs, Sarah E. 2019. "The Algorithm at Work? Explanation and Repair in the Enactment of Similarity in Art Data." *Information, Communication & Society* 1-17.

Optional

- Bix, Amy Sue. 2001. Prologue and Chapter 1 in *Inventing Ourselves Out of Jobs? America's Debate over Technological Unemployment, 1929-1981*. Baltimore: John Hopkins University Press.
- Zuboff, Shoshana. 1988. Introduction and Chapter 7 in *In the Age of the Smart Machine: The Future of Work and Power*. Basic Books.
- Ticona, Julia, and Mateescu, Alexandra. 2018. "Trusted Strangers: Cultural Entrepreneurship on Domestic Work Platforms in the On-Demand Economy." *New Media & Society* 20(11): 4384-4404.
- Christin, Angèle. "Counting Clicks. Quantification and Variation in Web Journalism in the United States and France." *American Journal of Sociology* 123(5): 1382-1415.

Week 8. November 12-14. Constructing Algorithms: Silicon Valley and Elsewhere

November 12

- Saxenian, AnnaLee. 1994. Introduction and Chapter 2 in *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Harvard University Press.
- Neff, Gina, and David Stark. 2003. "Permanently Beta: Responsive Organization in the Internet Era," Pp. 173-188 in Philip Howard and Steve Jones (Eds.), *Society Online: The Internet*

in Context, Sage.

- Turner, Fred. 2009. "Burning Man at Google: A Cultural Infrastructure for New Media Production." *New Media & Society*, 11(1-2), 73-94.
- Zukin, Sharon, and Max Papadantonakis. 2017. "Hackathons as Co-optation Ritual," in Arne L. Kalleberg, Steven P. Vallas (eds.) *Precarious Work / Research in the Sociology of Work* 31: 157–181.

November 14 * Guest lecture by Sanna Ali *

- Irani, Lilly. 2015. "Difference and Dependence among Digital Workers: The Case of Amazon Mechanical Turk." *South Atlantic Quarterly* 114(1): 225-234.
- Gray, Mary, and Siddarth Sury. 2019. Introduction and Chapter 3 in *Ghost Work. How to Stop Silicon Valley from Building a New Global Underclass*. New York: HMH.
- Newton, Casey. 2019. "The Trauma Flow." *The Verge*, Feb. 25, 2019.
- Robert, Sarah. 2019. Chapter 1 and 2, *Behind the Screen: Content Moderation in the Shadows of Social Media*. New Haven: Yale University Press.

Optional

- Graham, Mark, Isis Hjorth, and Vili Lehdonvirta. 2019. "Digital Labor and Development: Impacts of Global Digital Labor Platforms and the Gig Economy on Worker Livelihood." Pp. 269-294 in Graham, M. (Ed). *Digital Economies at Global Margins*. Cambridge: MIT Press
- Neff, Gina. 2012. Chapter 3 from *Venture Labor: Work and the Burden of Risk in Innovative Industries*. MIT Press.
- Marwick, Alice. 2013. Introduction and Chapter 4 in *Status Update. Celebrity, Publicity, and Branding in the Social Media Age*. Yale University Press.

Week 9. November 19-21. Regulating Algorithms

November 19

- Sourour, Bill. 2016. "The Code I'm Still Ashamed Of." Medium FreeCodeCamp Post.
- O'Neil, Cathy. 2016. Conclusion in *Weapons of Mass Destruction*. Crown.
- Diakopoulos, Nicholas, and Friedler, Sorelle. 2016. "How to Hold Algorithms Accountable." *MIT Technology Review*, Nov. 17, 2016.
- ACLU. 2018. "Judge Allows ACLU Case Challenging Law Preventing Studies on 'Big Data' Discrimination to Proceed." April 2, 2018.
- Margaret Mitchell et al. 2019. "Model Cards for Model Reporting." *ACM Proceedings of the Conference on Fairness, Accountability, and Transparency*. 220-229.

November 21

- Burrell, Jenna. 2016. "How the Machine 'Thinks:' Understanding Opacity in Machine Learning Algorithms." *Big Data & Society* 3(1).
- Ananny, Mike, and Crawford, Kate. 2016. "Seeing Without Knowing: Limitations of the Transparency Ideal and its Application to Algorithmic Accountability." *New Media & Society* 20(3): 973-989.
- Powles, Julia, and Helen Nissenbaum. 2018. "The Seductive Diversion of 'Solving' Bias in

Artificial Intelligence.” *Medium*, Dec. 7, 2018.

Optional

Schudson, Michael. 2015. Introduction, *The Rise of the Right to Know: Politics and the Culture of Transparency, 1945-1975*. Harvard University Press.

Ziewitz, Malte. 2016. “Governing Algorithms: Myth, Mess, and Methods.” *Science, Technology, & Human Values* 41(1): 3-16.

No Class on November 26-28 – Thanksgiving Week

Week 10. December 3-5. Wrapping things up

December 3

Espeland, Wendy Nelson, and Mitchell L. Stevens. 1998. “Commensuration as a Social Process.” *Annual Review of Sociology* 24 (1): 313–43.

December 5

Davies, William. 2017. “How Statistics Lost Their Power – And Why We Should Fear What Comes Next,” *The Guardian*. January 19, 2017.

Silverman, Craig. 2019. “Facebook Said It Would Give Detailed Data to Academics. They’re Still Waiting.” *BuzzFeed*, August 22, 2019.

Optional

Bowkey, Geoffrey C., and Susan Leigh Star. 1999. Introduction and Chapter 1 in *Sorting Things Out: Classification and Its Consequences*. Cambridge: MIT Press.

Porter, Theodore. 1997. Chapter 7 in *Trust in Numbers. The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton University Press.

Borgman, Christine L. 2015. Preface and Chapter 1 in *Big Data, Little Data, No Data: Scholarship in the Networked World*. MIT Press.

Zerubavel, Eviatar. 1996. “Lumping and Splitting: Notes on Social Classification.” *Sociological Forum* 11(3): 421-433.

-- Final Paper Due in Class on December 5 --