

The Politics of Algorithms

COMM 154-254 / SOC 154
Spring 2017
T/Th, 3:00-4:20pm
380-380F

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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, computing technologies increasingly mediate 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, 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 reinforce differences between groups
- Students will be able to apply these mechanisms in analyzing other algorithmic 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) and Graduate levels (Comm 254).

Comm 154 / Soc 154 (Undergraduate Level)

1. Write *three short reading responses* about the readings (approximately 300 words, due by 8pm Monday, the day before class, on Canvas, in the “discussion” section). The format for these paragraphs may vary but it is useful to include short descriptions of the main ideas, concepts, and arguments that you found stimulating, as well as questions, concerns, or disagreements with the ideas you encountered.
2. A *midterm paper* (due on May 7). 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* (due on June 10). You will be asked to choose among several possible topics and write an essay of approximately 2,000 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: 15%
- Class participation 15%
- Midterm examination: 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 *four 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 week in addition to the required ones. The reading responses will connect the optional readings to the mandatory readings (approximately 300 words, due by 8pm Monday, the day before class, on Canvas, in the “discussion” section).
2. A *midterm examination*. 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 statement.
3. For the *final paper*, graduate students will be asked to choose among several possible topics and write an essay of approximately 3,000 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.

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 examination: 30%
- Final paper: 40%

Readings

Please buy the following book:

O'Neil, Cathy. 2016. *Weapons of Math Destruction. How Big Data Increases Inequality and Threatens Democracy*. Crown Publishing.

The other 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). You may not talk on the phone, text, IM, email, read, solve crosswords, take pictures, etc. during class. All of these activities are likely to distract you, your peers, and the instructors, which is not fair to others in the class. Those engaging in these activities may be asked to leave the class. Direct repercussions could include loss of class attendance and class participation points.

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/oae>).

Week 1. April 4-6. Introduction. What are algorithms? Do they have politics?

Gillespie, Tarleton. 2014. "The relevance of algorithms." Pp. 167-194 in T. Gillespie, P. Boczkowski & K. A. Foot (eds.), *Media Technologies: Essays on Communication, Materiality, and Society*. MIT Press.

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

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.
- Desrosières, Alain. 2001. "How Real are Statistics? Four Possible Attitudes," *Social Research* 68 (2): 339-55.
- White House. 2016. [*Big Data: A Report on Algorithmic Systems, Opportunities, and Civil Rights*](#). Executive Office of the President.

Week 2. April 11-13. Facebook, Filter Bubbles, and the Public Sphere

- 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.
- Fraser, Nancy. 1990. "Rethinking the Public Sphere." *Social Text* 25/26: 56-80.
- Bakshy, Eytan, Solomon Messing, and Lada A. Adamic. 2015. "Exposure to Ideologically Diverse News and Opinion on Facebook." *Science* 348 (6239)
- Keegan, John. 2016. "[Blue Feed, Red Feed: See Liberal Facebook and Conservative Facebook Side By Side](#)." *The Wall Street Journal*.
- Zuckerberg, Mark. 2016. "[I Want to Share Some Thoughts on Facebook and the Election](#)."
- Tufekci, Zeynep. 2016. "[Mark Zuckerberg Is In Denial](#)." *The New York Times*.

Optional

- Habermas, Jurgen. 1989. *The Structural Transformation of the Public Sphere: An Inquiry into the Category of Bourgeois Society*. MIT Press. Pp. 1-56, 73-88, 236-50.
- Flaxman, Seth, Sharad Goel, and Justin M. Rao. 2016. "Filter Bubbles, Echo Chambers, and Online News Consumption." *Public Opinion Quarterly* 80 (S1): 298-320.
- Schudson, Michael. 1995. "Was There Ever a Public Sphere?" Pp. 189-203 in *The Power of News*. Harvard University Press.

Week 3. April 18-20. Privacy and Surveillance

*** Guest Lecture by Andrew Fitzgerald on April 20***

- Angwin, Julia. 2014. Introduction and Chapter 1 in *Dragnet Nation: A Quest for Privacy, Security, and Freedom in a World of Relentless Surveillance*. Times Book.
- Solove, Daniel J. 2015. "[Why Privacy Matters Even if You Have 'Nothing to Hide.'](#)" *The Chronicle of Higher Education*.
- Nissenbaum, Helen. 2011. "A Contextual Approach to Privacy Online." *Daedalus* 140(4): 32-48.
- Foucault, Michel. 1975. Chapter 1 and 3 in *Discipline and Punish: The Birth of the Prison*. Vintage.
- Introna, Lucas D., and David Wood. 2004. "Picturing Algorithmic Surveillance: The Politics of Facial Recognition Systems." *Surveillance & Society* 2 (2/3): 177-98.
- Scahill, Jeremy. 2015. "[The Assassination Complex](#)." *The Intercept*, October 15, 2015.
- Puar, Jasbir K. 2007. Pp. 151-165 in *Terrorist Assemblages. Homonationalism in Queer Times*. Duke University Press.

Optional

- Turow, Joseph. 2005. "Audience Construction and Culture Production: Marketing Surveillance

in the Digital Age.” *The ANNALS of the American Academy of Political and Social Science*, 597(1): 103-121.

Tufekci, Zeynep. 2014. “Engineering the Public: Big Data, Surveillance and Computational Politics,” *First Monday* 19 (7).

Gürses, Seda, and Claudia Diaz. 2013. “Two Tales of Privacy in Online Social Networks.” *IEEE Security & Privacy* 11 (3): 29-37.

Deleuze, Gilles. 1992. “Postscript on the Societies of Control.” *October* 59: 3-7.

Week 4. April 25-27. Algorithmic Discrimination

O’Neil, Cathy. 2016. Chapter 5 and 8 in *Weapons of Mass Destruction*. Crown.

Ananny, Mike. 2011. “[The Curious Connection Between Apps for Gay Men and Sex Offenders.](#)” *The Atlantic*. April 14

Sweeney, Latanya. (2013). “Discrimination in Online Ad Delivery.” *ACM Queue* 11(3): 1-19.

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.

Optional

Barocas Solon, and Selbst Andrew D. 2016. “Big Data’s Disparate Impact.” *California Law Review* 104: 671-732.

Braun, Lundy. 2005. “Spirometry, Measurement, and Race in the Nineteenth Century,” *Journal of the History of Medicine and Allied Sciences* 60 (2): 135-69.

Fourcade, Marion, and Kieran Healy. 2016. “Seeing Like a Market.” *Socio-Economic Review* 1-21.

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.

Week 5. May 2-4. Algorithms and the Future of Work

Rosenblat, Alex and Stark, Luke. 2016. “Algorithmic Labor and Information Asymmetries. A Case Study of Uber Drivers.” *International Journal of Communication* 10: 3758-3784.

Zuboff, Shoshana. 1988. Introduction and Chapter 7 in *In the Age of the Smart Machine: The Future of Work and Power*. Basic Books.

Vertesi, Janet. 2012. “Seeing like a Rover: Visualization, Embodiment, and Interaction on the Mars Exploration Rover Mission.” *Social Studies of Science* 42 (3): 393–414.

Sauder, Michael, and Wendy Nelson Espeland. 2009. “The Discipline of Rankings: Tight Coupling and Organizational Change.” *American Sociological Review* 74 (1): 63–82.

Optional

Scholz, Trebor. 2017. Introduction to *Digital Labor: The Internet as Playground and Factory*. Routledge.

Levy, Karen E.C. 2015. “The Contexts of Control: Information, Power, and Truck-Driving

- Work.” *The Information Society* 31(2): 160-174.
- O’Neil, Cathy. 2016. Chapter 6 in *Weapons of Mass Destruction*. Crown.
- Anderson, Chris W. 2011. “Between Creative and Quantified Audiences: Web Metrics and Changing Patterns of Newswork in Local US Newsrooms.” *Journalism* 12 (5): 550–66.

-- Midterm Paper Due on May 7 --

Week 6. May 9-11. How Users Perceive Algorithms: The Case of the Facebook Feed

*** Guest Lecture by Prof. Jeff Hancock on May 11***

- Bucher, Taina. 2016. “The Algorithmic Imaginary: Exploring the Ordinary Affects of Facebook Algorithms.” *Information, Communication & Society* 20(1): 30-44.
- Eslami, M., Rickman, A., Vaccaro, K., Aleyasen, A., Vuong, A., Karahalios, K., Hamilton, K., & Sandvig, C. 2015. “I always assumed that I wasn’t really that close to [her]”: Reasoning about invisible algorithms in the news feed.” *Proceedings of the 33rd Annual SIGCHI Conference on Human Factors in Computing Systems* ACM: 153-162.
- Kramer, Adam D.I., Guillory, Jamie E., and Hancock, Jeffrey T. 2014. “Experimental Evidence of Massive-Scale Emotional Contagion Through Social Networks.” *PNAS* 111(24): 8788-8790.
- French, Megan, and Jeff Hancock. 2017. “[What’s the Folk Theory? Reasoning About Cyber-Social Systems.](#)” SSRN paper.

Optional

- Burrell, Jenna. 2011. “User Agency in the Middle Range: Rumors and the Reinvention of the Internet in Accra, Ghana.” *Science, Technology & Human Values* 36(2): 139–59.
- boyd, danah. 2016. “Untangling Research and Practice: What Facebook’s “Emotional Contagion” Study Teaches Us.” *Research Ethics* 12(1): 4-13.
- Bucher, Taina. 2012. “Want to be on the top? Algorithmic power and the threat of invisibility on Facebook.” *New Media & Society*, 14(7): 1164–1180.

Week 7. May 16-18. Algorithmic Identities: Bodies, Intimacies, and Metrics

*** Guest Lecture by Moira Weigel on May 18 ***

- 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.
- Illouz, Eva. 2007. “Romantic Webs” in *Cold Intimacies: The Making of Emotional Capitalism*. Polity.
- Espeland, Wendy Nelson, and Mitchell L. Stevens. 1998. “Commensuration as a Social Process.” *Annual Review of Sociology* 24 (1): 313–43.
- Weigel, Moira. 2016. Chapter 2 (‘Likes’) in *Labor of Love: The Invention of Dating*. Farrar, Strauss and Giroux.
- Weigel, Moira. 2016. “[‘Fitbit For Your Periods’: The Rise of Fertility Tracking.](#)” *The Guardian*, March 23, 2016.

Optional

- Zelizer, Viviana. 2005. Introduction and Chapter 1 in *The Purchase of Intimacy*. Princeton University Press.
- Schull, Natasha. 2016. "Data for Life: Wearable Technology and the Design of Self Care," *BioSocieties* 11(3): 317-33.
- Rose, Nikolas, Pat O'Malley, and Mariana Valverde. 2006. "Governmentality." *Annual Review of Law and Social Sciences* 2: 83-106.

Week 8. May 23-25. Regulating Algorithms

- Pasquale, Frank. 2015. Introduction and Chapter 1 in *The Black Box Society: The Secret Algorithms That Control Money and Information*. Harvard University Press.
- 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.
- Garcia, Megan. 2017. "[How to Keep Your AI from Turning into a Racist Monster.](#)" *Wired*. February 13, 2017.
- 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*.

Optional

- Schudson, Michael. 2015. Introduction, *The Rise of the Right to Know: Politics and the Culture of Transparency, 1945-1975*. Harvard University Press.
- 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).
- Porter, Theodore M. 1995. Introduction and Chapter 5 in *Trust in Numbers. The Pursuit of Objectivity in Science and Public Life*. Princeton University Press.
- Christin, Angèle. 2016. "From Daguerreotypes to Algorithms: Machines, Expertise, and Three Types of Objectivity." *Computers and Society* 46(1): 27-32.

Week 9. May 30-June 1. Constructing Algorithms: Silicon Valley and elsewhere

- Saxenian, AnnaLee. 1994. Introduction and Chapter 2 in *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Harvard University Press.
- Marwick, Alice. 2013. Introduction and Chapter 4 in *Status Update. Celebrity, Publicity, and Branding in the Social Media Age*. Yale University Press.
- Turner, Fred. 2009. "Burning Man at Google: A Cultural Infrastructure for New Media Production." *New Media & Society*, 11(1-2), 73-94.
- Chen, Adrian. 2014. "[The Laborers Who Keep Dick Pics and Beheadings Out of Your Facebook Feed.](#)" *Wired*. October 23, 2014.
- 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.

Optional

- Barley, Stephen R., and Gideon Kunda. 2004. Introduction and Chapter 2 in *Gurus, Hired Guns, and Warm Bodies: Itinerant Experts in a Knowledge Economy*. Princeton University Press.
- Boltanski, Luc, and Eve Chiapello. 2005. "The New Spirit of Capitalism." *International Journal of Politics, Culture, and Society*, 18 (3-4): 161-188.
- Neff, Gina. 2012. Chapter 3 from *Venture Labor: Work and the Burden of Risk in Innovative Industries*. MIT Press.

Week 10. June 6. Wrapping things up

- Star, Susan Leigh, and Geoffrey C Bowker. 2000. Introduction ("To Classify Is Human") in *Sorting Things Out: Classification and Its Consequences (Inside Technology)*. MIT Press.
- Borgman, Christine L. 2015. Preface and Chapter 1 in *Big Data, Little Data, No Data: Scholarship in the Networked World*. MIT Press.
- Davies, William. 2017. "[How Statistics Lost Their Power – And Why We Should Fear What Comes Next](#)," *The Guardian*. January 19, 2017.

Optional

- Star, Susan L. 2010. This is not a boundary object: Reflections on the origin of a concept. *Science, Technology & Human Values*, 35(5), 601-617.
- Harcourt, Bernard. 2016. Introduction & Chapter 1 in *Exposed. Desire and Disobedience in the Digital Age*. Harvard University Press.

-- Final Paper Due on June 10 --