TECHNOLOGY AND DEMOCRACY

Course Description: Digital technologies shape – in ways both visible and obscure – many aspects of contemporary governance and democracy. As citizens, it is imperative that we understand how legislative and juridical concepts are built into these technologies, as well as how these technologies in turn impact contemporary uses and abuses of justice, privacy, surveillance, and representation. Beginning with the use of punch-cards to manage census data, this course tours the intersections of digital technology and American politics. Topics will include voting machines, hacktivism, the Snowden Affair, redistricting and congressional apportionment, statistical uses of polling data, the relation of national security to information privacy, as well as CCTV cameras, social networking, and algorithmic thinking.

Assessment:
Attendance and Participation: 20%
First Paper: 20%
Second Paper: 25%
Final exam: 35%

Participation: This is a lecture course. You are expected to attend all lectures, read and reflect on the assigned texts, pose relevant questions, and offer informed and thoughtful responses in both lecture and section.

Paper One (February 21): Find two to three articles online in which technology is discussed as having an impact on electoral politics in any country *besides* the United States. Provide a short analysis of the way in which the role of technology is described as impacting, undergirding, or bridling a state election. What is the relationship of technology to democracy being forwarded in these articles?

Paper Two (March 26): Pretend that you are writing an *Amicus Curiae* on behalf of the Society for the History of Technology for the case *Carpenter v. United States* (We will discuss the case in class). You will find on Canvas selections from briefs filed by technology companies (in support of neither party), by several states (in support of respondents), and the Electronic Frontier Foundation (in support of petitioner). Use these as examples to model your own brief, which should engage with some of the concepts and readings you've encountered so far this semester.

The *final exam* is a one-hour exam and will take place on the last day of class, April 25th. The exam will consist of two short essay questions. A week before the exam, I will distribute a list of five possible essay prompts; three of those five questions will constitute the exam, and you may choose to answer two of the three prompts. All of the essay questions will be based on material covered in readings and lectures.

Extension Policy: All requests for an extension should be emailed directly to steingart@fas.harvard.edu **at least** 24 hours before the paper is due. In other words, if for some reason you do not think you will be able to submit your paper on time, contact me in advance. I will only consider requests within 24 hours of the deadline in case of emergency or documented medical condition. Late papers will be deducted half a letter grade for each day it is overdue.

HOW TO TALK ABOUT TECHNOLOGY?

January 22 (M). Introduction
No assigned readings

January 24 (W). Introduction
Jasanoff, Sheila. 2006. "Technology as a Site and Object of Politics," in *The Oxford Handbook of Contextual Political Analysis* eds. Robert E. Goodin and Charles Tilly (New York: Oxford University Press): 745 – 766.
Nielsen, Rasmus Klein. 2016. "Democracy," in *Digital Keywords: A Vocabulary of Information Society and Culture* edited by Benjamin Peters (Princeton: Princeton University Press): 81-92.

ORIGINS: COMPUTERS, THE INTERNET, AND THE MILITARY

January 29 (M). WWII and the Cold War

Edwards, Paul. 1996, "Why Build Computers? The Military Role in Computer Research," in *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge, MA: MIT Press): 43-74.

Rhode, Joy. 2017. "Pax Technologica: Computers, International Affairs, and Human Reason in the Cold War," *Isis* 108 (4): 792 – 813.

January 31 (W). Cybernetics

Gerovitch, Slava. 2001. "'Mathematical Machines' of the Cold War: Soviet Computing, American Cybernetics and Ideological Disputes in the Early 1950s," *Social Studies of Science* 31 (2): 253-287.

Wiener, Norbert. 1950. *The Human Use of Human Beings: Cybernetics and Society* (Houghton Mifflin): "Cybernetics in History."

February 5 (M). Counterculture and the Personal Computer

Nelson, Ted. 1974. *Computer Lib/The Dream Machine*; *selections.*

Rosenblatt, Roger. 1983. "A New World Dawns" *Time* January 3.

Streeter, Thomas. "Romanticism and the Machine: The Formation of the Computer Counterculture," in *The Net Effect: Romanticism, Capitalism, and the Internet* (New York: New York University Press): 44-68.

February 7 (W). The Internet

Barlow, John Perry. 1996. "A Declaration of the Independence of Cyberspace." Online: https://www.eff.org/cyberspace-independence

Edwards, Paul. 2010. "Some Say the Internet Should Never Have Happened," *Media, Technology and Society: Theories of Media Evolution* edited by W. Russell Neumann (Ann Arbor: University of Michigan Press)

COUNTING

February 12 (M). Tabulating Machines, Counting People

Bowker, Geoffrey and Susan Leigh Star. 2001. "Pure, Real, and Rational Numbers: The American Imaginary of Countability," *Social Studies of Science* 31 (3):422-425.

Hollerith, Herman. 1894. "The Electrical Tabulating Machine," in *Journal of the Royal Statistical Society* 57 no. 4:678-689.

Von Oertzen, Christine. 2017. "Machineries of Data Power: Manual Versus Mechanical Census Compilation in Nineteen-Century Europe," *Osiris* 31 (1): 129-150

February 14 (W). Districting

Eillenberg, Jordan. 2017. "How Computers Turned Gerrymandering into a Science," *New York Times* (October 8): SR6. Online: https://www.nytimes.com/2017/10/06/opinion/sunday/computers-gerrymandering-wisconsin.html

Honner, Patrick. 2017. "The Math Behind Gerrymandering and Wasted Votes," *Quanta Magazine* (October 12). Online: https://www.quantamagazine.org/the-math-behind-gerrymandering-and-wasted-votes-20171012/

February 19 (M). No Class: President's Day

February 21 (W). Voting Machines
Coles, Kimberly A. 2004. "Election Day: The Construction of Democracy through Technique," *Cultural Anthropology* 19 (4): 551-580.
Miller, Clark A. 2004. "Interrogating the Civic Epistemology of American Democracy: Stability and Instability in the 2000 US Presidential Election," *Social Studies of Science* 34 (4): 501-530.

February 26 (M). Campaigns and Election Forecasting
PAPER ONE DUE
Kriess, Daniel. 2012. "Crowds and Collectivities in Networked Electoral Politics," *Limn* 2. Online: https://limn.it/crowds-and-collectivities-in-networked-electoral-politics/
Tufekci, Zeynep. 2014. "Engineering the Public: Big Data, Surveillance and Computational Politics," *First Monday* 19 (7). Online: http://firstmonday.org/ojs/index.php/fm/article/view/4901/4097
Zittrain, Jonathan. 2014. "Facebook could decide an election without anyone ever finding out: The scary future of digital gerrymandering — and how to prevent it," *New Republic* (1 June). Online: https://newrepublic.com/article/117878/information-fiduciary-solution-facebook-digital-gerrymandering

NETWORKING

February 28 (W). Regulating the Internet, SPAM, and Porn
Brunton. Finn. 2012. "Constitutive Interference: Spam and Online Communities," *Representations* 117: 30 – 58.
Coopersmith, Jonathan. 2000. "Pornography, Videotape, and the Internet," *IEEE Technology and Society Magazine* (Spring): 27-43.

March 5 (M). Digital Protest
Beltrán, Cristina. 2015. "'Undocumented, Unafraid, and Unapologetic': DREAM Activists, Immigrant Politics, and the Queering of Democracy," in eds. Danielle Allen and Jennifer S. Light *Understanding Citizenship in a Digital Age* (Chicago: University of Chicago Press): 80 – 105.
Tufekci, Zeynep. 2017. *Twitter and Tear Gas: The Power and Fragility of Networked Protest* (New Haven: Yale University Press): 3-28, and 115-131.

March 7 (W). Net Neutrality and the Digital Divide
Guest Lecture: Marc Aidinoff
Crawford, Susan. 2016. "Net Neutrality is Only a Start: The Limits of Net Neutrality," *Wired* (August, 1). Online: https://www.wired.com/2016/08/net-neutrality-is-only-a-start/#.on40p694y

Osenga, Kristen. 2013. "The Internet is Not a Super Highway: Using Metaphors to Communicate Information and Communication Policy," *Journal of Information Policy* 3: 3-54.

Wu, Tim. 2002. "A Proposal for Network Neutrality." Online: chrome-extension://oemmndcbldboiebfnladdacbdfmadadm/http://www.timwu.org/OriginalNNProposal.pdf

March 12 and 14. *No Class: Spring Recess*

March 19 (M). Networking at the Periphery

Everett, Anna. 2002. "The Revolution Will Be Digitized: Afrocentricity and the Digital Public Sphere," *Social Text* 20 (71):125-146.

Sandvig, Christian. 2012. "Connection at Ewiiaapaayp Mountain: Indigenous Internet Infrastructure," in eds. Lisa Nakamura and Peter A. Chow-White. *Race after the Internet* (New York: Routledge): 168-200.

PIRACY/ INTELLECTUAL PROPERTY

Mach 21 (W). From Books to Software

Con Díaz, Gerardo. 2016. "The Text in the Machine: American Copyright Law and the Many Nature of Software, 1974-1978," *Technology and Culture* 57 (4):753-779

Salin, Phil. 1991. "Freedom of Speech in Software." Online: http://philsalin.com/patents.html

Somers, James. 2017. "Torching the Modern-Day Library of Alexandria," *The Atlantic* (April17). Online: https://www.theatlantic.com/technology/archive/2017/04/the-tragedy-of-google-books/523320/

March 26 (M). From Napster to the Pirate Party

PAPER TWO DUE

Boyle, James. 2008. *The Public Domain: Enclosing the Commons of the Mind* (New Haven: Yale University Press): 1-16, and 122-159.

March 28 (W). Free/Open Source Software

Coleman, Gabriella. 2009. "From Internet Farming to Weapons of the Geek." *Cultural Anthropology* 58(15): S91-S101.

Kelty, Christopher. 2005. "Geeks, Social Imaginaries, and Recursive Publics." *Cultural Anthropology* 20 (2): 185-214.

PRIVACY

April 2 (M). Cryptography

Jones, Matt. 2017. "The Spy who Pwned me," *Limn* 8. Online: https://limn.it/the-spy-who-pwned-me/

Mitinick, Kevin D. 2017. "If You Don't Encrypt, You're Unequipped," in *The Art of Invisibility: The World's Most Famous Hacker Teaches You How to Be Safe in the Age of Big Brother and Big Data* (New York: Little, Brown and Company): 67-77.

Rogaway, Phillip. 2015. "The Moral Character of Cryptographic Work." Online: http://web.cs.ucdavis.edu/~rogaway/papers/moral.html

April 4 (W). Surveillance After 9.11

Cohen, Julie E. 2010. "The Inverse Relationship between Secrecy and Privacy," *Social Research: An International Quarterly* 77 (3):883-898.

Landau, Susan. 2013. "Making Sense from Snowden: What's Significant in the NSA Surveillance Revelations," *IEEE Security & Privacy* 11(4): 54-63.

Solove, Daniel. 2007. "'I've Got Nothing to Hide' and Other Misunderstandings of Privacy," *San Diego Law Review* 44: 745 -772.

April 9 (M). Personal Data

Nissenbaum, Helen. 2009. *Privacy in Context: Technology, Policy, and the Integrity of Social Life* (Stanford : Stanford University Press): 1-35.

April 11 (W). Genetic Security and Privacy

Guest Lecture: Sophia Roosth

Comfort, Nathaniel. 2014. "The Genetic Self." *Aeon.* Available online: https://thepointmag.com/2014/examined-life/genetic-self

ALGORITHM GOVERNMENTALITY

April 16 (M). Algorithm Bias

Bozdag, Engin. 2013. ''Bias in Algorithmic Filtering and Personalization.'' *Ethics and Information Technology* 15 (3): 209-27.

Gillespie, Tarleton. 2014. "The Relevance of Algorithms." In *Media Technologies: Essays on Communication, Materiality, and Society*, edited by Tarleton Gillespie, Pablo Boczkowski, and Kirsten Foot (Cambridge: MIT Press): 167-194.

Introna, Lucas D., and Helen Nissenbaum. 2000. ''Shaping the Web: Why the Politics of Search Engines Matters.'' *The Information Society* 16 (3): 169-85.

Seaver, Nick. 2014. "On Reverse Engineering," *Medium* (January, 27). Online; https://medium.com/anthropology-and-algorithms/on-reverse-engineering-d9f5bae87812

April 18 (W). Bitcoins

Guest Lecture: Gili Vidan

Brunton, Finn. 2016. "Keeping the Books," *Limn* 6. Online: https://limn.it/keeping-the-books/

Farrell, Henry. 2015. "Dark Leviathan," *Aeon.* Online: https://aeon.co/essays/why-the-hidden-internet-can-t-be-a-libertarian-paradise

Zimmer, Zac. 2017. "Bitcoin and Potosí Silver: Historical Perspective on Cryptocurrency," *Technology and Culture* 58 (2): 307-334.

April 23 (M). Algorithm Accountability

Gillespie, Tarleton. 2012. "Can an Algorithm be Wrong?" *Limn* 2. Online: https://limn.it/can-an-algorithm-be-wrong/.

Pasquale, Frank. 2015. *The Black Box Society: The Secret Algorithms that Control Money and Information* (Cambridge: Harvard University Press): 1-18, and 101-139.

April 25 (W). Final Exam