

INFO 188

Behind the Data: Humans and Values

UC Berkeley, School of Information
Fall 2021 | Virtual | 250 students

Professor: Deirdre K. Mulligan
Lead GSIs: Emma Lurie & Zoe Kahn
GSIs: Liza Gak & Anton Bosnega

Course Overview: This course provides an introduction to legal and ethical issues surrounding data and society, as well as hands-on experience with frameworks, processes, and tools for addressing them in practice. It blends social and historical perspectives on data with ethics, law, policy, and case examples to help students understand current ethical and legal issues in data science and machine learning. Legal, ethical, and policy-related concepts addressed include: the contingent and contextual nature of data; research ethics; privacy and surveillance; bias and discrimination; and oversight and accountability. These issues will be addressed throughout the lifecycle of data — from collection to storage to analysis and application. The course emphasizes strategies, processes, and tools for attending to ethical and legal issues in data science work. Course assignments will emphasize researcher and practitioner reflexivity, allowing students to explore their own social and ethical commitments.

Course Structure: Recorded lecture with rotating group of ~30 students (1.5 hours); interactive lab activities in lab section with ~30 students (1.5 hours)

Learning Objectives:

- Understand that the decisions data scientists and technologists make embed values and have political consequences that impact people, society, and the environment
- Identify and articulate basic ethical frameworks, policy frameworks, and legal obligations relevant to data science with data about humans
- Understand that professional responsibility extends beyond legal compliance
- Understand that technical solutions are one of many ways, including law and policy, to prevent or remediate harms
- Understand and work with the contested and contextual nature of concepts including, privacy, fairness, deception, discrimination, bias, and opacity
- Understand the differential impacts of sociotechnical systems on historically and traditionally marginalized groups
- Use methods from the course to identify intended and unintended consequences of technical systems

- Reflexively articulate critiques and/or justifications of their own work and education in data science
- Understand workplace practices that can support reflection and action on social and political values
- Be able to articulate reasons for resisting, constraining, and embracing different uses of data science grounded in different theories and frameworks

Week 1: No lab

Weekly reading

- Winner, "Do Artifacts Have Politics?" *Daedalus*, Vol. 109, No. 1, Modern Technology: Problem or Opportunity? (Winter, 1980), pp. 121-136 The MIT Press on behalf of American Academy of Arts & Sciences, <http://www.jstor.org/stable/20024652>
- Read: Vaccine Passports: What are They, and Who Might Need One? New York Times.
- Watch: What would a vaccine passport look like? Wall Street Journal

Week 2: Purging Voter Rolls ([template](#))

Lab Overview: In this lab, students explore how a seemingly simple technical task -- matching items across databases to purge people from the voter rolls -- can be an incredibly complex one with widespread social and political implications. This lab asks students to consider how they might design a system to remove people who have died and people convicted of felonies from the voter rolls. In doing so, students consider (a) limitations of different technical designs (b) how technical systems may have different implications depending upon the data used (i.e., purging people who have died vs. people convicted of felonies), and (c) how the various system designs may disproportionately disadvantage particular groups of people.

Weekly reading

- Kitchin, R. (2014). Conceptualizing Data. In *The data revolution* (pp. 1-26). New York: SAGE.
- Azra Ismail and Neha Kumar. 2018. Engaging Solidarity in Data Collection Practices for Community Health. *Proc. ACM Hum.-Comput. Interact.* 2, CSCW, Article 76 (November 2018), 24 pages. <https://doi.org/10.1145/3274345>. Read Introduction and § 4.1 (all subsections), 5.2.1 and 5.2.2 and Conclusion
- Sentencing Project. "UN Report on Reducing Racial Disparity in the Criminal Justice System."
- Lea Kissner IAPP Talking Tech: Handling Human Names
- "Are States Purging Or Cleaning Voter Registration Rolls?" NPR. All Things Considered.

Week 3: Strategic Actions ([template](#))

Lab Overview: In this lab, students consider how individuals interact with systems strategically and what that means for efforts to measure and predict based on behavioral trace data. Students explore these themes in the context of educational technologies used to measure student engagement and participation.

Weekly reading:

- Tim Hwang and Karen Levy. "The Cloud and Other Dangerous Metaphors." *The Atlantic*. January 20, 2015.
- Wu, Eva Yiwei, Emily Pedersen, and Niloufar Salehi. "Agent, Gatekeeper, Drug Dealer: How Content Creators Craft Algorithmic Personas."
- Burrell, Jenna, Zoe Kahn, Anne Jonas, and Daniel Griffin. 2019. When Users Control the Algorithms: Values Expressed in Practices on Twitter. In proceedings of the ACM Computer-Supported Cooperative Work and Social Computing (CSCW) conference. Austin, TX. [PDF] Read abstract, introduction, section 4.0 - 4.5
- Oravec, Jo Ann. (2019). The "Dark Side" of Academics? Emerging Issues in the Gaming and Manipulation of Metrics in Higher Education. *Review of Higher Education*. 42. 859-877. 10.1353/rhe.2019.0022.
- Gillespie, Tarleton. (2016). Algorithmically recognizable: Santorum's Google problem, and Google's Santorum problem. *Information, Communication & Society*. 20. 1-18. 10.1080/1369118X.2016.1199721.

Week 4: Algorithmic approaches to emotion recognition ([instructor version](#), [part 1](#), [part 2](#))

Lab Overview: In this lab, students explore the challenge (read: impossibility) of measuring emotion through (a) facial expressions and (b) tone of voice. In addition, students were asked to reflect on how deploying a system of this sort might disproportionately disadvantage particular groups of people. Please note: the original version of this lab was developed by Galen Panger.

Weekly reading

- Becker, Howard S. *Telling about society*. University of Chicago Press, 2007, Chapters 1 & 2 "Telling About Society" pp. 2-14 and "Representations of Society as Organizational Products" pp. 15-29.
- Jacobs, Abigail Z., and Hanna Wallach. "Measurement and fairness." Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency. 2021. <https://arxiv.org/abs/1912.05511>
- Galen Panger, Why the Facebook Experiment is Lousy Social Science. *Medium*. August 28, 2014.
- Tom Simonte, Amazon says it can detect fear on your face. You scared?. *Wired*, August 18, 2019
- Rhue, Lauren. "Racial influence on automated perceptions of emotions." *Available at SSRN 3281765* (2018).

Week 5: Census: exploring the social construction of identity (race and gender) & politics of classification. ([template](#))

Lab Overview: In this lab, students explore (1) the social construction of identity and (2) the politics of classification through an examination of how racial categories in the US have changed over time and how the census counts same sex couples. This lab asks students to consider how the census renders some identities visible and others invisible, and asks students to envision how this data could be used in harmful ways.

Weekly reading:

- Geoffrey C. Bowker & Susan Leigh Star, "The Case of Race Classification and Reclassification under Apartheid," *Sorting Things Out: Classification and Its Consequences* (MIT Press) Ch. 6.
- Seltzer, W., & Anderson, M. (2001). The dark side of numbers: The role of population data systems in human rights abuses. *Social Research*, 68(2), 481- 513.
- Pew Research Report: What the Census Calls Us
- Timeline: Timeline of census categories, can download at end of link above
- The Census Still Doesn't Know How Many Same-Sex Couples There Are. FiveThirtyEight.
- The Census Will Officially Count Same-Sex Couples for the First Time Ever - But That's not Enough. The Conversation.

Week 6: Facial Recognition: Application and Deployment ([template](#))

Lab Overview: In this lab, students consider the application and deployment of facial recognition technologies on college campuses. This lab asks students to consider how the implications of the technical system might differ depending upon (a) the data used in the system and (b) the type of crime that is being committed -- property theft vs. verbal harassment. In particular, this lab gets students to think about refusal: the decision not to deploy a technical system given the wide ranging harms.

Weekly reading

- Listen to: "Wrongfully Convicted by an Algorithm" The Daily, NYT. August 3, 2020.
- Harcourt, Bernard E. *Against prediction: Profiling, policing, and punishing in an actuarial age*. University of Chicago Press, 2008 pp. 21-34 only.
- Troy Duster, Race and Reification in Science *Science* 18 Feb 2005: 1050-1051
- Aguera y Arcas, Blaise, Margaret Mitchell, and Alexander Todorov. "Physiognomy's new clothes." *Medium* (6 May 2017), online:< <https://medium.com/@blaisea/physiognomys-new-clothesf2d4b59fdd6a> (2017).
- Watch: Tawana Petty's talk, "Beyond the Ouch: Activating Anti-racists in Data and Digital Spaces" as part of the inaugural PIT-UN Lecture Series at UC Berkeley.
- Sidney Fussell. "How Surveillance Has Always Reinforced Racism." *Wired* (June 2020)

Week 7: Ethical Frameworks in Practice: The Case of Henrietta Lacks ([template](#))

Lab Overview: In this lab, students critically examine and apply ethics frameworks to real world research projects (i.e., genomic testing in the case of Henrietta Lacks) and reflect on the limits of legal guidelines to ensure ethical research.

Weekly reading:

- The Belmont Report. (1979). The Belmont Report: Ethical principles and guidelines for the protection of human subjects of research
- CARE principles for Indigenous Data Governance
- Skloot, R. (2013, March 24). The immortal life of Henrietta Lacks, the sequel. *The New York Times*.

Week 8: Unpacking Privacy: Diary Study of Privacy Online & In-Person - Lab Coming Soon!

Lab Overview: Throughout the semester, students conducted three diary study entries to reflect on the way that they maintain their privacy in Zoom and in-person. In this lab, students draw on their diary entries and use the privacy analytic developed by Mulligan, Koopman, and Doty (2016) to unpack privacy. In doing so, students also reflect on diary studies as a qualitative research method and critically examine how the data gathered differs from that collected via behavioral trace data.

Weekly reading

- Secretary's Advisory Committee on Automated Personal Data Systems. (1973). Records computers and the rights of citizens. Washington, DC: U.S. Department of Health, Education & Welfare.
[justice.gov/sites/default/files/opcl/docs/recommrights.pdf](https://www.justice.gov/sites/default/files/opcl/docs/recommrights.pdf). (pp. 22-30; 33-64 (just the top)).
- Mulligan, Deirdre K., Colin Koopman, and Nick Doty. "Privacy is an essentially contested concept: a multi-dimensional analytic for mapping privacy," *Phil. Trans. R. Soc. A* 374.2083 (2016): 20160118
- Brunton, Finn, and Helen Nissenbaum. "Vernacular resistance to data collection and analysis: A political theory of obfuscation," *First Monday* 16.5 (2011).

Week 9: Algorithmic Impact Assessments in Action - Lab Coming Soon!

Lab Overview: In this lab, students use the Algorithmic Impact Assessment (AIA) to evaluate the fairness of the Ofqual algorithm used to assign exam scores in England in 2020. Students explore a synthetic dataset of outcomes to critically examine what *fairness* would look like in such a system.

Weekly reading

- Procurement as Policy: Administrative process for Machine Learning, pp. 776-790; and section IV
- Surveillance Policy Making by Procurement. Abstract and III.B (on Oakland)

- Reisman, Dillon, Jason Schultz, Kate Crawford, and Meredith Whittaker. "Algorithmic impact assessments: A practical framework for public agency accountability." *AI Now Institute*(2018).

Week 10: Consumer protection and dark patterns - Lab Coming Soon!

Lab Overview: Coming soon!

Weekly reading

- Hoofnagle, Chris. "Online privacy" in *Federal Trade Commission Privacy Law and Policy* (2016) (p.145-192) [[PDF](#)]
- FTC Policy Statement on Deception [[PDF](#)]
- FTC Policy Statement on Unfairness [[PDF](#)]

Week 11: Collective algorithmic Audit -- Lab Coming Soon!

Lab Overview: Coming soon!

Weekly reading

- Introna, Lucas D., and Helen Nissenbaum. "Shaping the Web: Why the politics of search engines matters," *The information society* 16.3 (2000)
- Deirdre Mulligan, Joshua Kroll, Nitin Kohli, Richmond Wong, "This Thing Called Fairness" CSCW 2019 (Sections 1-2, 5-9, but skip Section 5.0.1)

Week 12: Equal Protection - Lab Coming Soon! .

Lab Overview: Coming soon!

Weekly reading - Coming soon!

Week 13: TBD - Lab Coming Soon!

Lab Overview: Coming soon!

Weekly reading - Coming soon!

Week 14: TBD - No lab

Weekly reading

Week 15: Meaningfully sharing research and data - Lab Coming Soon!

Lab Overview: Coming soon!

Weekly reading

- Stodden, Victoria, et al. "Enhancing reproducibility for computational methods." *Science* 354.6317 (2016): 1240-1241.
- Rokem, A., Marwick, B., & Staneva, V. (2017). "Assessing reproducibility." In *The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive*

Sciences. Eds. Kitzes, J., Turek, D., and Deniz, F. Oakland: University of California Press.

<https://www.practicereproducibleresearch.org/core-chapters/2-assessment.html>

- Christen, Kimberly. "Does information really want to be free? Indigenous knowledge systems and the question of openness." (2012).