

Syllabus for Undergraduate Course on *Information Ethics, Law, and Policy*

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Acknowledgement:

This course is a redesigned version of the Spring 2019 version of *Information Ethics, Law, and Policy* course, which I co-instructed with Steven Jackson at Cornell University.

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OVERVIEW:

This course investigates the ethical, legal, and policy foundations of contemporary information technology. Through lectures, readings, discussions, and short assignments, we will address contemporary challenges ranging from questions of inequality and waste in computing to the contests over intellectual property and privacy in a networked world. We will cover key areas of technology law and policy such as intellectual property; telecommunications and network policy; concentration, antitrust, and freedom of expression; privacy, security and freedom of information; and the emerging law and ethics of robotics, big data, and artificial intelligence. We will also address new ethical questions and controversies that law and policy has yet to sort out. Through this course you'll learn about the key frameworks, processes, and institutions that govern the contemporary world of information technology, along with key theories and methods from academic fields that shape and inform them (law, philosophy, economics, political science, communication, sociology, etc.). You will also learn core writing and analytic skills central to success in the worlds of social science, law, policy, and many other settings. But above all you'll learn to engage critically and strategically with the worlds of information and technology around you, deciding what kind of information consumer, user, and citizen YOU want to be.

[note: This course can also be used to satisfy the College of Engineering technical writing requirement].

LEARNING OBJECTIVES:

By the end of Information Ethics, Law, and Policy, you will learn to:

- *Analyze* the social shaping of new computational forms and practices, including the influence of organizations, institutions, law, and culture on technology development and adoption
- *Understand* key ethical principles and foundations that govern individual and collective decision-making around the design and use of emerging information technologies
- *Reflect* on your own ethical positions and values, and offer reasoned arguments to support them (including in dialogue with the potentially differing positions of others)
- *Analyze* the key institutional, regulatory, and legal processes shaping current and future information policy in the U.S. (and to lesser extent internationally)
- *Identify* and *analyze* the key policy positions, interests, and strategies of major stakeholders in the information field
- *Read* and *survey* primary documents such as administrative reports and court judgments that have shaped information ethics, law, and policy in the U.S.
- *Write* concise, informed, and effective policy memos and case analyses appropriate to work in the ethics, law, and policy fields

These learning objectives will be met through a combination of lectures, readings, discussion, and individual and small group assignments, as described below.

GRADING AND ASSIGNMENTS

Policy memos (3 x 20 pts)	-- 60%
Lecture and section participation; groupwork and clicker exercises	-- 20%
Final exam	-- 20%

POLICY MEMOS (60 pts):

Students will be expected to complete **three** substantial policy analysis assignments (3-4 pages single-spaced), each tied to a key substantive topic of the course. These will follow the format of a policy brief or memo: a concise and tightly argued piece directed at a specific stakeholder or decision maker (head of an institution or agency, a federal judge, the chief privacy officer at Facebook, etc.) to justify, defend, or convince them of a particular course of action. Concise and effective writing and analysis is a core skill set of the course, and we'll spend some time practicing and developing it. See [Appendix #1: How to Write a Policy Memo](#) for instructions on the format of the submission.

PARTICIPATION (20 pts):

GROUP WORK AND CLICKER EXERCISES:

We have designed this course with a number of exercises in lectures and sections that will require working with a group of your peers. *Each student will be a member of a group of 5-6 students that would do lecture and section exercises together. You will be assigned your group in the first section.* Your success in this course depends on how your group works together to think through and analyze key ethical and policy questions raised by exercise prompts. Working with your group will not only provide you access to a diversity of positions on an ethical issue, but also help you understand key concepts and terms in your group discussions. Your TAs will track the progress of your group's discussion and responses to exercises over the course of the semester. *We will also conduct clicker exercises during lectures to gather immediate feedback from you on lecture materials and quiz you using multiple-choice questions on the course materials individually.* In addition, as part of your general ELP training and fluency, students are strongly encouraged to track and read relevant tech policy news sources, blogs, analysis sites, etc. on an ongoing basis (and you should feel free to call items of interest to the attention of your group or the instructor or your TA!). We will share a list of some good general sources for this early in the term and may occasionally forward your news items to the wider class list.

LECTURE AND SECTION EXERCISES:

During the semester, *we'll periodically engage in lecture and section exercises that review key primary materials* (Supreme Court or regulatory decisions, Facebook policies, etc.) or ask you to think about and reflect on important ethical, legal, and policy questions. *Lecture exercises will be centered on the relevant course theme and do not require additional preparation.* Just complete your readings, come to the lecture, sit with your group, and we will provide you with instructions and materials to complete the exercise. These are not meant to be major commitments, to stress you out, or to eat up vast swathes of your time – for this reason, they are graded on a completion basis: do a decent job and get them in on time and you'll get full marks.

For section exercises, you will be asked to prepare and bring to section a brief (1 page single-spaced) set of notes that summarizes key features of a case, document or issue in question; possible wider implications; and your own take or position on the matter. What action did the Court (or agency, or company) take and why? Are alternatives or counter arguments possible? And what are the wider implications, if any? You should come to section prepared to share and explain your case and response to your group and the wider community of your peers who may have arrived at different conclusions, or may not have read the case at all (during weeks where we divide up readings across 3-4 different groups). On

weeks with assigned section exercises, please submit to the relevant folder online (per instructions of your section TA) and bring 5-6 paper copies to section: 1 for your TA to keep, and 4-5 to share with your group members.

FINAL EXAM (20 pts):

At the end of the course (during the course's scheduled exam slot, as assigned by the registrar), we'll hold a short-answer exam reviewing key materials covered during the course. The exam is designed to test your knowledge of key concepts, principles, terms, and cases, and will draw on lectures, assigned readings, section exercises, and discussions. The key terms listed in the syllabus are a good place to start in preparing for this exam. Our objective with the final exam is meant to force a review function, and integration/reflection across all areas of the course. *The general rule of thumb for writing these short answers is to focus on what the term means, provide some details on how the term is put into practice, what is its significance for the themes of the course, and finally, use a good example to illustrate the meaning of the term in action.* More details on format and recommendations for preparation will be shared closer to the date of the final exam.

CLASS AND SECTION PREPARATION, ATTENDANCE, and PARTICIPATION:

Reading expectations in the class vary somewhat by week, but in general you can expect to read around 20-30 pages per class and section, and up to 60-90 pages per week. In some cases, these will be academic texts (book sections, short articles, etc.). In others, they will include popular news sources (tech and business journalism, online sources, etc.) and primary legal and policy documents (Supreme Court rulings, regulatory filings, corporate policies, etc.). In all cases, readings should be completed BEFORE arriving at class on the day they are listed in the syllabus (or you'll find it hard to follow what's going on in lecture or section and may find yourself unprepared for in-class discussions and exercises). We have worked hard to keep the reading load manageable (mostly by covering vast swathes of territory through lectures). We will also try to alert you to items you should be paying special attention beforehand (especially in cases of the longer, more academic-y or more arcane readings). The trade-off is that we require and fully expect you to complete and engage with what remains. All assigned readings will be available via link or download from the class website (i.e., there are no required books for purchase, though we are always happy to recommend additional sources for those looking to go deeper into particular areas). Lecture PowerPoints will also be posted to the class website at the start of the lecture in question (for those of you who prefer to take notes on slides as you go along). We will also post audio recordings of the lecture after the lecture.

Because of the centrality of lectures and the interactive work, we'll be doing in both class and sections, **REGULAR AND ACTIVE ATTENDANCE IS A CENTRAL AND MANDATORY PART OF THE CLASS.** In general, students may miss 1-2 classes and up to 1 section over the course of the semester without any negative effect on your grade (though you are urged to check with your group for lecture or section notes and/or visit us in office hours to catch up on what you've missed). *If issues or situations arise that result in repeated or prolonged absences (medical situations, death in the family, etc.) please contact _____ (email) and your section TA as soon as possible to let us know what's going on and we can talk about strategies for addressing it.* Please also let _____ (email) know of any university-approved accommodations you may need to support your work in the class. Beyond just being there, you should also come ready and willing to engage. Within the constraints of a large lecture course,

this is intended as a hands-on and interactive class, and while we'll spend a fair bit of time in the Monday/Wednesday lectures reviewing core concepts and content and will try to keep things interesting, an important part of the energy and liveliness of the class and sections will depend on YOU. We'll also be doing a fair number of in-lecture and (especially) in-section activities, and it's essential and only fair to your peers and your group that you come ready and prepared to engage.

LAPTOP AND SCREEN POLICIES:

While this class doesn't follow any particular laptop or phone policy (laptops banned, laptops in first or last rows, etc.) we want you to be mindful of the potential impact of laptops and phones on the quality of your learning experience and those around you. Used well, these are great resources for learning – for note taking, for collaborative group work, and for looking up class-relevant questions and items on the fly (which we encourage you to do). Used poorly, they are a distraction to you and those around you (and we suspect account for the small but significant number of fails we encounter on the final exam each year). If we see evidence of this happening in lecture or section, we may ask you to leave your laptop (or phone) in your bag or at home, and also revisit the general class laptop policy (but see important positive uses above). More generally, we'd encourage you to exercise common sense and respect for those around you (and do you really need to check that status update or watch that cat video now? *Really?*).

A GENERAL NOTE ON GRADING and LATE POLICIES:

In general, we will grade assignments according to the rubric below:

- F (usually indicates did not complete)
- D (assignment is missing significant parts, seriously mistakes core ideas or concepts, demonstrates serious writing or presentation failures, or is otherwise deeply inadequate)
- C (assignment is substantially complete, but may miss or mistake important points; writing and argumentation may be unclear)
- B (assignment is complete and solid in all respects; covers major relevant points; writing and argumentation are sound; demonstrates understanding of core concepts)
- A (assignment is excellent in all respects; covers the material thoroughly and effectively; demonstrates significant mastery of core concepts; advances a clear and convincing line of argument)

In cases where your work falls short of the mark, we'll indicate main weak points and shortcomings in marginal notes or comments. In cases where common problems appear across multiple papers (i.e., several students are experiencing similar issues) we may also address these in general terms with the wider class or section. For each of the larger policy memos, we'll also try to post 3-4 examples of student work that we regard as particularly strong or effective (and may ask you to share yours in this way at some point in the semester). We are also happy to meet during office hours or by appointment to talk about any difficulties you may be facing. If you feel you are consistently falling short of expectations and are looking for strategies to improve, please set up an appointment with your TA and/or the instructors. If you have concerns about a particular grade you are encouraged to first take the issue up with the original grader; if you remain unclear or uncertain about your grade after this meeting, you may ask your TA to send the paper to _____ (*email*) for a second opinion. _____ will read the paper fresh and reserve the right to either raise or lower the originally assigned grade (and we have adjusted papers both ways in past, though in the majority of cases find that our assessment agrees with the original grader). We are also happy to provide additional feedback and strategies for improvement for future assignments.

Late policies: Assignments are due in class and/or online at the start of the class or section for which they are assigned – *different TAs may have different procedures for submission (electronic, hard copy, etc.) so you should talk to your TA about how policy memos and shorter assignments are to be submitted*).

Assignments turned in after this time, except for excused medical or family emergencies, will be reduced at the rate of one half-letter per day (i.e. an ‘A’ paper becomes an ‘A-’ after 24 hours, ‘B+’ after 48, etc.). This is partly for reasons of equity, and partly because the assignments often connect to in-class work on the day they’re due, and it’s important that you come ready to participate and contribute. Students are allowed a one-time one-week extension for any of the major writing assignments (policy memos) without any penalty. Please contact your section TA to request your one-week extension on any assignment before the deadline for the assignment. We will by default apply this policy to your first late writing assignment.

COLLABORATION, ACADEMIC INTEGRITY, and TROUBLESHOOTING:

We welcome and encourage forms of collaboration and mutual support in your group (reading or discussion groups, note pools, etc.), and we are fully committed to the principle of teaching, learning and research as activities that are collaborative at their core. We are also committed to the idea of the classroom, sections and your group as a place for differing opinions, and for (respectful) engagement with ideas, values and beliefs that might differ from your own; this is especially important in a class built substantially around questions of ethics, values, and technology. Nevertheless, all work submitted in the form of assignments, position papers, or exams must still be your own, and relevant outside sources (including online ones) should be properly acknowledged, as outlined in the [Cornell University Code of Academic Integrity](#). If you have any questions around academic integrity issues, we encourage you to contact instructors directly and early to address them. If serious problems arise during the semester (medical or family issues; serious stress or well-being issues; falling seriously behind; or other circumstances that compromise your ability to succeed in the course and your wider program of studies) please let us know as soon as possible - we may be able to help. Finally, please let us (both instructor and TA) know at the outset of the course about any special accommodations you may require, as arranged with the office for student disabilities.

WRITING SUPPORT:

This course involves a substantial writing component, principally in the form of policy memos as described above. We will do our best to help support the development of your writing as the semester goes on, including through feedback on submitted memos. Those concerned about or looking for additional help with writing are encouraged to consult the Cornell Writing Centers, as described below:

The Cornell Writing Centers: The Cornell Writing Centers provide support for individuals at any stage of the writing process. It is a free resource available to everyone on campus—faculty, staff, graduate and undergraduate students—for nearly any kind of writing project: applications, presentations, lab reports, essays, and more. Tutors (trained undergraduate and graduate students) serve as responsive listeners who read thoughtfully, and offer considerate, supportive, and challenging feedback. Please note that tutors can only work with small portions of text (no more than 5 pages) during a typical 30-minute session. They also have experience working with non-native English speakers. During the academic year, the Writing Centers are open Mondays-Thursdays, 3:30–5:30pm (Mann Library & Rockefeller Hall 178) and Sundays-Thursdays, 7:00–10:00pm (Olin library 403; Uris Library 108; Tatkon Center 3343). Writers can schedule appointments (at <http://knight.as.cornell.edu/wc>) or drop in at a convenient time.

Syllabus Themes and their Distribution across Weeks

Themes across the weeks	Lectures	Sections	Dates, 2020	Policy Memos*
Introduction to Information, Ethics, Law, and Policy	1	1	Jan 22-24	
Ethics and Social Shaping of IT	2	1	Jan 27-31	
Theme #1: Computing Ethics				
(a) Diversity, Inequality, and Inclusion	2	1	Feb 3-7	Begin PM #1
(b) Labor, Consumption, and Waste	2	1	Feb 10-14	
Theme #2: Intellectual Property				
(a) Copyright	2	1	Feb 17-21	
<i>February Break (Feb 22-25, 2020)</i>				
(b) Patents	2	1	Feb 26-Mar 2	End PM#1
Theme #3: Telecommunication and Network Policy				
(a) Wired and Broadband	2	1	Mar 4-9	Begin PM#2
(b) Wireless and Spectrum	2	1	Mar 11-16	
(c) Net Neutrality Debate	1	1	Mar 18-20	
Theme #4: Competition, Antitrust, and Freedom of Expression				
(a) Emerging Monopolies	2	1	Mar 23-27	
<i>Spring Break (Mar 28-Apr 5, 2020)</i>				
(b) IT and the First Amendment	2	1	Apr 6-10	End PM#2 and Begin PM#3
(c) Regulating Platform Speech and Fake News	1	0	Apr 13	
Theme #5: Privacy, Security, and Freedom of Information				
(a) Privacy and Surveillance	2	1	Apr 15-20	
(b) Online Privacy and Big Data	1	1	Apr 22-24	
Theme #6: AI Ethics				
Decision-making Machines	2	0	Apr 27-29	End of PM#3
Wrap-up and Review	1	1	May 1-4	
* See Appendix #1: How to Write a Policy Memo for instructions on the format of the submission				

Introduction to Information, Ethics, Law, and Policy (22-24 January 2020)

Welcome to a semester-long journey with us into key contemporary and emerging ethical, legal, and policy issues in a networked digital world. We have designed this course to explore a key insight in action that we begin and end this course with (spoiler alert!):

*Questions of information ethics, law, and policy, like any other domain of governance, are primarily questions of **balancing** between competing interests, and between rights and obligations of multiple stakeholders in the landscape of digital economy. To be able to maintain this balance, an understanding of the history of law and policy in specific sectors and aspects of IT industry (addressed as ‘themes’ in the outline of this course) is required to come up with solutions to contemporary problems they face and anticipate the trajectory of their future(s).*

We will contextualize this work of balancing in the following themes during the span of this semester:

1. *Computing Ethics*
(diversity, inequality, inclusion, labor, consumption, waste, and the social and material challenges of the digital economy)
2. *Intellectual Property*
(patents, copyrights, and balancing between different uses of Intellectual Property)
3. *Telecommunications and Network Policy*
(AT&T as a regulated monopoly, net neutrality, spectrum allocation, and balancing access to infrastructural resources for communication services)
4. *Competition, Antitrust, and Freedom of Expression*
(emerging monopolies in the IT industry, regulating speech, antitrust, and balancing the interests of platform providers and users)
5. *Privacy, Security, and Freedom of Information*
(surveillance, contextual privacy, and balancing access to user information)
6. *AI Ethics*
(emerging challenges in AI policy, big data analytics, and balancing between humans and machines)

As the table on ‘[Syllabus themes and their Distribution across weeks](#)’ illustrates, we have designed the course mostly as *deep dives* into specific issues related to the themes. *Generally, a deep dive comprises of two lectures and one section on the issue in focus.* As we move from one issue to another, we will provide you with a brief outline of the issue, key questions, key terms, required readings, the outline of exercises that we have planned for each week, and a set of recommended readings (in case, an issue piques your interest or as additional resources for your assignments in this course). However, in aligning the course with Cornell University’s academic calendar certain issues have been given less time (in terms of number of lectures or sections) than a deep dive.

Note that we expect you to have read the readings and thought about the key questions and key terms before the lectures. While the key terms and questions pertain to the deep dive, the required readings bring into focus the issues that we will discuss in each lecture. Hence, we have assigned readings for each lecture by date. The lectures will provide you deeper insight into and build on the readings that you have already done on the issue. So, doing your readings before the lecture on an issue will not only ensure that

you can understand and grasp the lectures better, but will also help with your performance during exercises.

For the first week of this course, we will spend most of our time setting up the course (its mechanics and trajectory) during the lecture and assigning a group to every student during section. We will also briefly discuss ideal attributes of information law and policy and why they are difficult to achieve in practice.

Key question(s):

- How is the course on INFO 1200 organized? What are its expected takeaways and learning objectives?
 - What is confusing about the design of the course and the syllabus?

Key terms:

Computing ethics; Intellectual property; Telecommunication and network policy; Competition; Antitrust; Freedom of expression; Privacy; Security; Freedom of information; AI Ethics.

Required Readings:

Lecture #1: 22nd January 2020

- Syllabus for INFO 1200: Information Ethics, Law, and Policy [We would like you to familiarize yourself with the themes of this course (*preferably read the short introductions and key questions provided for each issue*) and understand the course mechanics]

Section #1: 24th January 2020

- Students will be divided into groups of 5-6 at this section. You will work with your group on lecture and section exercises.

Ethics and Social Shaping of IT (27-31 January 2020)

We begin with the basics of understanding the foundational features of this course: (1) the mutual shaping of information technology, law, and society and (2) the relationship between ethics and information policy. Understanding the first is important because it changes the nature of questions that we ask about how things came to be arranged the way they are in the world. As MacKenzie and Wajcman explain:

If our thinking centers on the effect of technology on society, then we will tend to pose questions like, ‘How can society best adapt to changing technology?’ We will take technological change as a given, as an independent factor, and think through our social actions as a range of (more or less) passive responses. If, alternatively, we focus on the effect of society on technology, then technology ceases to be an independent factor. Our technology becomes, like our economy or our political system, an aspect of the way we live socially. It becomes something whose changes are part of wider changes in the way we live. It even becomes something whose changes we might think of consciously shaping—though we must warn right at the beginning that to say that technology is socially shaped is not to say that it can necessarily be altered easily. To draw an analogy, political systems clearly are shaped by wider societies they are part of, but changing them is no simple business, no straightforward consequence of an individual or collective decision to try to change them (MacKenzie and Wajcman 1985, 2–3).

While there is no straightforward solution to the problem of shaping the emerging uses of information technology, thinking about the mutual effects of information technology, law, and society on each other allows us to ask: how can we consciously shape each of them, so that *together* they become a part of the wider changes we wish to see in the world? But, how do we decide on the nature of these wider changes and how do we work towards consciously shaping IT, law, and society?

These questions bring us to the second feature: the relationship between ethics and information policy. Ethics in the broadest sense is centered on the concern of figuring out *how best to live your life*. Imagine a future in which you’re asked to be a part of an IT project that presents serious risks to users. In that scenario, will you act in a way that makes you feel comfortable with your actions, if the consequences of the project became public knowledge? Will it matter to you if your loved ones got to know about your actions? Will it matter whether your actions, in hindsight, make you think of yourself as a better or a worse human being? If these questions didn’t matter to someone who is in the same position as you, will you trust them (see real-life examples of tech regrets in Tiffany 2019 in recommended readings)? *Understanding the ethical underpinnings of the decisions we make determines the moral character of the wider changes in the world produced by the mutual shaping of IT, law and society.* These wider changes are often visible and trackable, however there are others that remain invisible and don’t fit. For example, Star and Bowker (2007) use residual categories to analyze what it is like to not fit into an available category scheme. Residual categories expose what we take for granted in building information technologies as classification systems and making them work in society:

What many people have failed to appreciate in the design of classification systems is that residual categories are vital to the form and to the aesthetics of all formal systems, and their usability. They are the defining white space around a formal system’s objects, just as in art. They limn purpose, suffering, exclusion and centrality. Just as voices of the other, the subaltern, and the

silenced in literature may expose a master narrative, so do residual categories expose the taken for granted and the axiomatic, in any formal system (Star and Bowker 2007, 275).

Key question(s):

- How do information technology, law, and society mutually shape each other? What is the role of ethics and policy in this ongoing process of mutual shaping?
- What are the different approaches to making ethical decisions? When is a policy ethical?
- If creating categories is a basic building blocks of information systems, then how do we engage with *things* that get left out of categories?
- Who is a member of the ethical community and who is not? Whose experiences are reflected in the rules/laws/stuff around us, and whose are not? Who gets to make ethical claims, and how are those claims recognized by the wider community? Who wins and who loses?

Key terms:

Determinacy in policy-making; Non-conjectural nature of policy; Normative or Prescriptive Ethics; Descriptive Ethics; Applied Ethics; Virtue Ethics; Consequentialism; Deontological Ethics; Standing outside vis-à-vis Standpoint positionality; Technological determinism; Social constructivism; Economic shaping of technology; Path dependency; Technological momentum; Technological systems and paradigms; Stickiness of technological development; Heterogenous engineers; Reverse salients; Brittleness of technologies; Contextual responsiveness; Code as law; Formal models of ethical decision-making; Residual categories; Uniqueness debate in computing ethics; Stages of computing developments: Introduction, Permeation, and Power; Policy vacuums; Infosphere.

Required Readings:

Lecture #2: 27th January 2020

- Bynum, Terrell Ward. 2008. "Milestones in the History of Information and Computer Ethics." In *The Handbook of Information and Computer Ethics*, edited by Kenneth Einar Himma and Herman T. Tavani, 25–48. New Jersey: Wiley.
- Donald MacKenzie and Judy Wajcman. 1985. "Introductory Essay and General Issues." In *The Social Shaping of Technology*, edited by Donald MacKenzie and Judy Wajcman, 2–25. Buckingham: Open University Press.

Lecture #3: 29th January 2020

- Star, Susan Leigh, and Geoffrey C Bowker. 2007. "Enacting Silence: Residual Categories as a Challenge for Ethics, Information Systems, and Communication." *Ethics and Information Technology* 9 (4): 273–80.
- Markkula Center for Applied Ethics. 2015. "A Framework for Ethical Decision Making." *Santa Clara University Website*. 2015. <https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/a-framework-for-ethical-decision-making/>.
- Vallor, Shannon, and Brian Green. 2018. "Best Ethical Practices in Technology." *Santa Clara University Website*. 2019. <https://www.scu.edu/ethics-in-technology-practice/best-ethical-practices-in-technology/>.

Section #2: 31st January 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

Option #1: Best Ethical Practices in Technology

Group exercise: Having gone through the sixteen ethical ‘best practices’ in technology (Vallor and Green 2018), discuss and answer the following questions in your group:

- Which two do you think are the most challenging to carry out?
- What do you think could be done (by an individual, a team, or an organization) to make those practices easier?

This exercise could also be turned into a clicker question and asking students to vote on the most challenging best practices. The vote should be followed by a discussion on the most voted best practice and procedures to make them easier.

Option #2: Residual categories

Think-Group-Share exercise: What categories/systems are YOU residual to? What categories/systems do NOT have a ‘box’ (or too many boxes!) for you—and how do you suffer/struggle/work around this situation?

You are expected to think independently about your answer (and possibly jot notes for yourself). After three minute or so, you will start a discussion in your group. Compare similarities and differences between experiences of residuality among members of your group. Focus on what these similarities and differences tell you about the nature of residual categories and their impact on information systems.

We will go around the class and ask groups at random to share their insights with the whole class.

Option #3: Ethics through Stuff

Think exercise: Look around you in the lecture hall and identify five examples of ‘ethics through stuff’ or things that are ‘relentlessly moral.’

- Explain the implied ethics/morality in each of your examples.
- If you had the option to design an alternative for one of the five examples you have noted, which one would you choose? Why? What would be your alternative design? What is the implied ethics/morality of the alternative?

Option #4: The Moral Machine

Each group will judge one whole set of moral dilemmas *together* (13 scenarios, accessible at <http://moralmachine.mit.edu/>), where a driverless car must choose the lesser of two evils, such as killing two passengers or five pedestrians.

As a group member, you must first think for yourself, make a choice, and note down your reasoning for your choice. Then discuss the scenario with your group members, reach a consensus on a choice, and

finally note down reasoning for your choice as a group. Repeat this process for each new scenario. Once the set is complete, answer the following questions:

- How were the reasonings of individual groups members similar or different from the reasoning of the group?
- Consider the following claim: ‘If we design driverless car to automatically kill pedestrians who are jaywalking in situations of sudden brake failure, then no one would jaywalk in the future.’ Is this claim ethical? When would such a design decision be reasonable?
 - In the future, driverless cars are everywhere, and they are designed to automatically kill jaywalking pedestrians in situations of sudden brake failure. Pedestrians know about this design feature and rarely jaywalk. Would this future be an instance of technological determinism? Or social constructivism? What is the politics of driverless cars here?
 - In this future, driverless cars follow all the traffic rules. Would driving be easier on roads or more difficult? Why?

Recommended Readings:

- Tiffany, Kaitlyn. 2019. “A Timeline of High-Profile Tech Apologies.” *Vox Media*, July 26, 2019. <https://www.vox.com/the-goods/2019/7/26/8930765/tech-apologies-former-facebook-google-twitter-employees-list>.
- Winner, Langdon. 1980. “Do Artifacts Have Politics?” *Daedalus* 109 (1): 121–36.
- Pinch, Trevor J, and Wiebe E. Bijker. 1984. “The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other.” *Social Studies of Science* 14 (3): 399–441.
- Moor, James. 1985. “What Is Computer Ethics?” *Metaphilosophy* 16 (4): 266–75.
- David, P. 1985. “Clio and the Economics of QWERTY.” *The American Economic Review* 75 (2): 332–37.
- Latour, Bruno. 1992. “Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts.” In *Shaping Technology/Building Society*, edited by Wiebe E Bijker and John Law, 225–58. Cambridge: MIT Press.
- ACM Code 2018 Task Force. 2018. “ACM Code of Ethics and Professional Conduct.” *Association for Computing Machinery*. 2018. <https://www.acm.org/code-of-ethics>.

Theme #1(a) | Computing Ethics: Diversity, Inequality, and Inclusion (3-7 February 2020)

To start with our first theme of the course, we tackle the problem of social inequality and its multi-faceted relationship with technology. A classic facet of this relationship is the digital divide. Initially conceptualized as a binary of ‘haves’ and ‘have nots’ differentiated by physical access to digital technologies, digital divide now signifies a deeper set of concerns revolving around access to infrastructural means (electricity, bandwidth, connectivity, etc.), digital literacy and user competence, and access to social and technical support networks. Furthermore, there are concerns around job security with the proliferation of automation, troubles with hiring processes and management of diversity in technology companies (especially in the Silicon Valley), and finally, the challenges produced by the structural context within which low-income individuals engage with high-tech economy and government. As Eubanks elaborates:

We all live under this new regime of data analytics, but we don’t all experience it in the same way. Most people are targeted for digital scrutiny as members of social groups, not as individuals. People of color, migrants, stigmatized religious groups, sexual minorities, the poor, and other oppressed and exploited populations bear a much heavier burden of monitoring, tracking, and social sorting than advantaged groups.

The most marginalized in our society face higher levels of data collection when they access public benefits, walk through heavily policed neighborhoods, enter the health care system, or cross national borders. That data reinforces their marginality when it is used to target them for extra scrutiny. Groups seen as undeserving of social support and political inclusion are singled out for punitive public policy and more intense surveillance, and the cycle begins again. It is a feedback loop of injustice (Eubanks 2018).

However, does this necessarily lead to the conclusion that technology causes inequality. Attributing the cause of social inequality to technology would inevitably be a form of technological determinism. As Rotman further specifies:

Asking whether technology causes inequality is the wrong question. Instead, we should be asking how advancing technologies have changed the relative demand for high-skill and low-skill workers, and how well we are adapting to such changes. Surely, rapid advances in technology have exacerbated discrepancies in education and skills, and the rise of digital technologies could possibly be playing a part in creating an extreme elite of the very rich. But it makes no sense to blame technology, just as it makes no sense to blame the rich. It is our institutions, including but not only our schools, that need to change. The reforms that experts recommend are numerous and varied, ranging from a higher minimum wage to stronger job protections to modifications of our tax policy. [...]

A good place to start is by asking what the problem is and why we care (Rotman 2014).

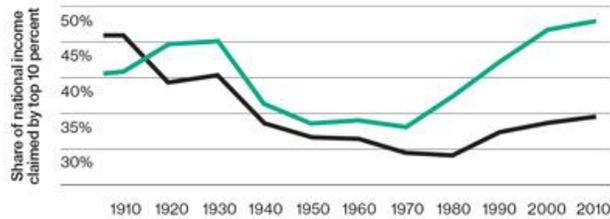
In the meantime, as these reforms are being debated and policy recommendations are being made, the income inequality in the United States has been on the rise (see figure from Rotman 2014 on the next page). *Inequality is growing in scope and scale and it manifests in how we make decisions on what new technologies should be developed, by whom, for whose interest, and towards what end.*

The Inequality Problem

Inequality is growing particularly fast in the United States, while accumulated wealth as a percentage of national income is rising in Europe. In the aftermath of the recession, much of the recovery went to the very rich. Meanwhile, those with low levels of education are falling further behind.

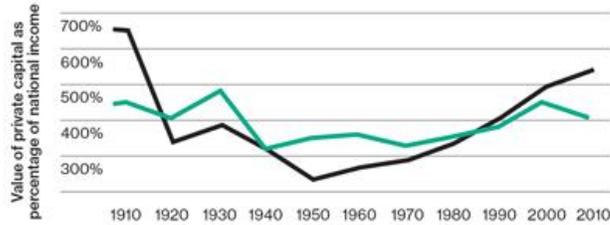
Income inequality in Europe and the United States

— U.S.
— Europe

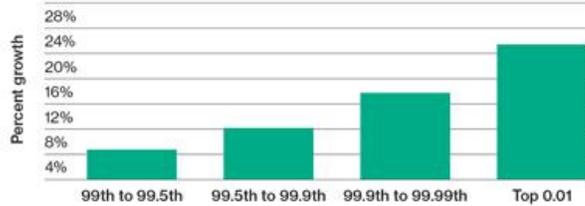


Wealth-to-income ratio in Europe and the United States

— U.S.
— Europe

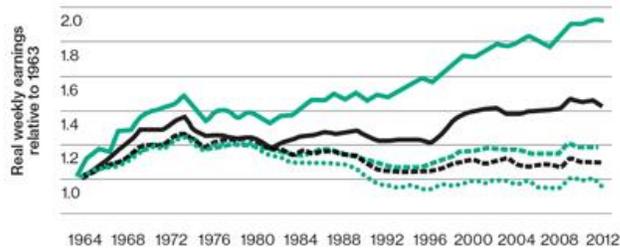


Growth in income for households within the top percentile, 2009–2010



Change in real wage levels in U.S. by education (men)

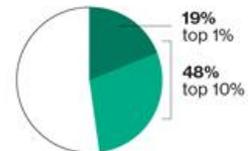
— > Bachelor's degree
— Bachelor's degree
— Some college
— High school graduate
— High school dropout



Average U.S. income (in 2012 dollars)

1970	Top 10%	\$137,223
	Bottom 90%	\$33,135
1975	10%	\$138,384
	90%	\$31,759
1980	10%	\$142,808
	90%	\$32,413
1985	10%	\$150,599
	90%	\$32,120
1990	10%	\$184,843
	90%	\$32,345
1995	10%	\$194,933
	90%	\$31,768
2000	10%	\$244,153
	90%	\$35,799
2005	10%	\$247,452
	90%	\$33,688
2010	10%	\$239,813
	90%	\$30,840
2012	10%	\$254,449
	90%	\$30,439

U.S. income share (2012)



MIT Technology Review

Key question(s):

- Do new technologies *overcome* or *exacerbate* social inequalities? How do we think about developing technologies not only *for* the people but *with* them and *for* them?
- Since there are a select set of people who get opportunities to shape development of information technologies, how do we question this process of selection and make it more *diverse* and *inclusive*?

- If we build technologies to replace certain types of work, then what will the people who used to do that work do?
- Information systems now have a major role to play in providing services to people. How do we understand the limits of what they can do in the delivery of these services?

Key terms:

Relationship between technology, employment and inequality; Explicit bias; Implicit bias; Interruption studies; Normalizing bias; Culture problem in diversity initiatives; Pipeline problem in diversity initiatives; Cognitive differences; Instrumental v. Justice/Rights-based arguments for diversity; Job creation v. Job destruction arguments on use of technology; Distributional impacts of job gains and losses; Deskillling v. Reskilling arguments for automation; Wealth generation v. Wealth distribution arguments for income inequality; Economies of agglomeration; Supermanagers; Superstar economy; Digital divide; Digital poorhouse; Automating inequality.

Required Readings:

Lecture #4: 3rd February 2020

- Rotman, David. 2014. "Technology and Inequality." *MIT Technology Review*, October 2014. <https://www.technologyreview.com/s/531726/technology-and-inequality/>.
- Bessen, James. 2016. "Computers Don't Kill Jobs but Do Increase Inequality." *Harvard Business Review*, March 2016. <https://hbr.org/2016/03/computers-dont-kill-jobs-but-do-increase-inequality>.
- Abbate, Janet. 2003. "Women and Gender in the History of Computing." *IEEE Annals of the History of Computing* 25 (4): 4–8. <https://doi.org/10.1109/MAHC.2003.1253885>.
- Mundy, Liza. 2017. "Why Is Silicon Valley So Awful to Women?" *The Atlantic*, April 2017. <https://www.theatlantic.com/magazine/archive/2017/04/why-is-silicon-valley-so-awful-to-women/517788/>.
- Google, and Gallup. 2016. "Diversity Gaps in Computer Science: Exploring the Underrepresentation of Girls, Blacks and Hispanics." <http://goo.gl/P34aH>. [Focus on the 'Executive Summary' and 'Conclusion' of the report and you may skim the sections in between.]

Lecture #5: 5th February 2020

- Eubanks, Virginia. 2018. "The Digital Poorhouse." *Harper's Magazine*, January 2018. <https://harpers.org/archive/2018/01/the-digital-poorhouse/>.
- Damore, James. 2017. "Google's Ideological Echo Chamber: How Bias Clouds Our Thinking about Diversity and Inclusion." Internal Memo @ Google. 2017. <https://assets.documentcloud.org/documents/3914586/Googles-Ideological-Echo-Chamber.pdf>.
- Molteni, Megan, and Adam Rogers. 2017. "The Actual Science of James Damore's Google Memo." *Wired*, August 2017. <https://www.wired.com/story/the-pernicious-science-of-james-damores-google-memo/>.

Section #3: 7th February 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

Option #1: Implicit Bias Test

Think-Group-Share Exercise: Take the implicit bias test *before coming to the lecture* on Gender-Career IAT (accessible at <https://implicit.harvard.edu/implicit/takeatest.html>), which focuses on a relative link between family and females and between career and males. During the lecture, discuss within your group the answer to the following questions:

- Is the test an appropriate method to reveal gender bias in assumptions about career? Why/why not? Did the results make you reflect on your own implicit biases? Why/why not?
- If you had the option to design an alternative test, how would you design it? How would this alternative design encourage more reflection on implicit biases of your test subjects?

Option #2: Damore Debate

Group exercise: Divide your group into three teams. The first team supports Damore's viewpoint, the second team opposes Damore's viewpoint, and finally the third team (comprising of one or more members depending on the size of the group) that plays the role of devil's advocate. Each side gets about two minutes to present their arguments to the group. The role of the devil's advocate team is to express opinions which are very different to what other two teams have been saying, in order to make the overall debate more interesting and multi-faceted. The first round of presenting positions should be followed by a round of open discussion among group members to answer the following questions:

- What should be Google's approach to managing diversity and inclusion in its corporate environment?
- How do we reconcile Damore's position with the objective of encouraging diversity at the workplace?

Option #3: Automating Inequality

Group exercise: Consider the following case reported by Eubanks (2018):

In 2014 [...] the state [investigated] families who were receiving cash benefits through a federal program called Temporary Assistance for Needy Families. TANF benefits are loaded onto EBT cards, which leave a digital record of when and where cash is withdrawn. [The] administration mined data collected by federal and state agencies to compile a list of 3,650 transactions in which TANF recipients withdrew cash from ATMs in smoke shops, liquor stores, and out-of-state locations. The data was then released to the public.

The transactions that were flagged as suspicious represented only 0.3 percent of the 1.1 million cash withdrawals completed during that time period, and the data showed only where cash was withdrawn, not how it was spent. But the administration disclosed the data to suggest that TANF families were defrauding taxpayers by buying liquor, cigarettes, and lottery tickets.

Discuss within your group the answer to the following questions:

- What ethically significant harms might TANF families suffer because of this disclosure?
- What ethically significant benefits could come from government tracking EBT card transactions?

- The location of the ATM is used as a proxy for estimating how the money was spent in this case. What other proxies could potentially be used to estimate expenditure of TANF benefits?

Recommended Readings:

- Martin Ford. 2015. "Introduction." In *The Rise of the Robots: Technology and the Threat of a Jobless Future*, ix–xviii. New York: Basic Books.
https://www.uc.pt/feuc/citcoimbra/Martin_Ford-Rise_of_the_Robots.
- Miller, Claire. 2017. "Tech's Damaging Myth of the Loner Genius Nerd." *New York Times*, August 12, 2017. <https://www.nytimes.com/2017/08/12/upshot/techs-damaging-myth-of-the-loner-genius-nerd.html>.
- Badger, Emily. 2018. "In Superstar Cities, the Rich Get Richer, and They Get Amazon." *New York Times*, November 7, 2018. <https://www.nytimes.com/2018/11/07/upshot/in-superstar-cities-the-rich-get-richer-and-they-get-amazon.html>.
- Silicon Valley diversity initiatives (read the service you use!):
 - Amazon: <https://www.amazon.com/b?node=10080092011>
 - Google: <https://diversity.google>
 - Apple: <https://www.apple.com/diversity/>
 - Microsoft: <https://www.microsoft.com/en-us/diversity/>
 - Facebook: <https://www.facebook.com/facebookdiversity/>
- See also:
 - Under-represented Minorities in Computing at Cornell: <http://urmc.cs.cornell.edu/>
 - Women in Computing at Cornell: <https://wicc.acm.org/>

Theme #1(b) | Computing Ethics: Labor, Consumption, and Waste (10-14 February 2020)

In this deep dive, we engage with the material ethics of digital systems — “interlaced chains of resource extraction, human labor and algorithmic processing across networks of mining, logistics, distribution, prediction and optimization” (Crawford and Joler 2018) — on two fronts. First, we explore sustainability practices of technology firms and engage with questions of waste and repair. Second, we investigate the techniques for integrating workers into computational technologies that allow employers to literally access invisible human workers through APIs. As Crawford and Joler (2018) illustrate using Alexa as a poignant example in their work, these two fronts are not mutually exclusive:

With each interaction, Alexa is training to hear better, to interpret more precisely, to trigger actions that map to the user’s commands more accurately, and to build a more complete model of their preferences, habits and desires. What is required to make this possible? Put simply: each small moment of convenience – be it answering a question, turning on a light, or playing a song – requires a vast planetary network, fueled by the extraction of non-renewable materials, labor, and data. The scale of resources required is many magnitudes greater than the energy and labor it would take a human to operate a household appliance or flick a switch. A full accounting for these costs is almost impossible, but it is increasingly important that we grasp the scale and scope if we are to understand and govern the technical infrastructures that thread through our lives.

[... They ultimately conclude that] contemporary forms of artificial intelligence are not so artificial after all. We can speak of the hard physical labor of mine workers, and the repetitive factory labor on the assembly line, of the cybernetic labor in distribution centers and the cognitive sweatshops full of outsourced programmers around the world, of the low paid crowdsourced labor of Mechanical Turk workers, or the unpaid immaterial work of users. At every level contemporary technology is deeply rooted in and running on the exploitation of human bodies (Crawford and Joler 2018).

Informal human workers not only clean the toxic electronic waste dump produced by devices that operationalize artificial intelligence, but they also tag and label thousands of hours of digital archives for the sake of feeding the neural networks to support machine learning. *While human work is integral to producing devices and processing the waste they produce, technology firms have zealously guarded their devices from the human work of repairing and maintaining them.*

Not long ago, anyone with the time, tools, and patience could repair damn near anything. That changed as computers and processors took on a greater role in just about everything you own. The mobile revolution exacerbated the problem. Packing increasingly sophisticated technology into smaller, sleeker devices led manufacturers to adopt new manufacturing techniques. That made it far more difficult for home tinkerers to fix a laptop, a television, or smartphone—let alone a car or farm tractor—making independent repair outfits essential. Then manufacturers started using copyright laws to keep their repair manuals offline, proprietary fasteners to seal their products, and in some cases, digital rights management to protect their software. [... A repair technician] told lawmakers his employees cannot safely open a growing number of devices without specialized documentation, diagnostic software, and tools. Even if they succeed in opening a device, they can’t always get the parts needed to repair it. That helps manufacturers and hurts you, the person who paid good money to buy that device in the first place (Wiens 2017).

Key question(s):

- How far should the ethical responsibilities of: a) tech firms, and b) tech users/consumers extend with regard to problems of sourcing, consumption, and waste in the tech industries?
- Are Apple (et. al.'s) policies thoughtful and sufficient? Short-sighted or insufficient?
- Are there other mechanisms or responses (by users, by firms, by law/policy) that ought to be deployed to address these problems?
- If big data is all in a cloud, then where is this cloud? How do we think about the *material* costs of building, managing, and repairing the enormous information systems of our times?
- Crowdsourcing and human computation are often described as a new frontier for HCI research and creativity, and for technological progress more broadly. What are the ethics and values of crowdwork? How do we engage with the invisibility of human workers who form the backbone of human computation systems such as the Amazon Mechanical Turk?

Key terms:

Environmental footprint of computing; Extractivism; Digital dump; Fair repair legislation; Right to repair; Warranty assertions; Device lockout; Proprietary controls; Repair monopolies; Planned obsolescence; Circular economy initiatives; Renewable energy contracts; Carbon offset purchases; Digital labor; Outsourcing; Crowdwork; Worker invisibility; Human computation or Microlabor systems; Amazon Mechanical Turk; Humans-as-a-service; Turkopticon; Activist technologies.

Required Readings:

Lecture #6: 10th February 2020

- Crawford, Kate, and Vladan Joler. 2018. "Anatomy of an AI System: The Amazon Echo as An Anatomical Map of Human Labor, Data and Planetary Resources." *AI Now Institute and Share Lab*. 2018. <https://anatomyof.ai/>.
- Frankel, Todd. 2016. "The Cobalt Pipeline: Tracing the Path from Deadly Hand-Dug Mines in Congo to Consumers Phones and Laptops." *Washington Post*, September 30, 2016. <https://www.washingtonpost.com/graphics/business/batteries/congo-cobalt-mining-for-lithium-ion-battery/>.
- Finley, Klint. 2016. "The Cloud Needs to Get a Whole Lot Greener in 2017." *Wired*, December 2016. <https://www.wired.com/2016/12/2017-cloud-needs-get-whole-lot-greener/>.
- Kirkpatrick, Nick. 2015. "Making a Living in the Toxic World of Discarded Electronics." *Washington Post*, April 15, 2015. <https://www.washingtonpost.com/news/insight/wp/2015/04/15/the-children-who-make-a-living-in-the-toxic-world-of-discarded-electronics/>.
- Wiens, Kyle. 2017. "You Bought That Device, and Dammit, You Should Be Able to Fix It." *Wired*, March 2017. <https://www.wired.com/2017/03/right-to-repair-laws/>.

Lecture #7: 12th February 2020

- Irani, Lilly C, and M Six Silberman. 2013. "Turkopticon: Interrupting Worker Invisibility in Amazon Mechanical Turk." In *Proceedings of the SIGCHI Conference on Human Factors in*

Computing Systems, 611–20. CHI '13. New York, NY, USA: ACM.
<https://doi.org/10.1145/2470654.2470742>.

- Motherboard. 2018. “Inside the Beach House Connecting the World’s Internet.” *YouTube*. 2018.
<https://www.youtube.com/watch?v=iMATHvcqzuk>.

Section #4: 14th February 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

Option #1: Right to repair

Think-Group-Share exercise: When was the last time you repaired or had to get help to repair any device you own? Think of your own experience with repairing your device and note the difficulties you faced in the process? Compare your experiences with your group. Answer the following questions as a group:

- Based on the comparison, what makes the process of repair easier and what makes it difficult?
- Now, consider the iFixit Manifesto [accessible at: <https://eustore.ifixit.com/en/The-iFixit-Manifesto/> and excerpted below]. Among the rights mentioned in the manifesto, which one is the most difficult to exercise? Why? What would make the exercise of this right easier?



Option #2: Google’s reCAPTCHA paradox

Consider the case the human labor involved in Google’s reCAPTCHA:

In a paradox that many of us have experienced, in order to prove that you are not artificial agent, you are forced to train Google’s image recognition AI system for free, by selecting multiple boxes that contain street numbers, or cars, or houses (Crawford and Joler 2018).

Group exercise: You all must have helped train Google’s image recognition AI system at some time in the past. Considering that Google will make a lot of profit of its image recognition services in the future, discuss within your group whether there is an argument to be made about compensating (however, small the amount maybe) all users who have had to use Google’s reCAPTCHA as contributors to the AI system’s accuracy in identifying objects in images? Why or why not?

- For groups that decided that there should be compensation, how would you go about building a model for distributing this compensation?

- For groups that decided that there should be no compensation, when does the work that you do online on any platform you use (social media or otherwise) stop being free?

Option #3: Amazon Mechanical Turk (AMT) and Turkopticon

Clicker exercise: Consider the following propositions and vote on them:

- The AMT signals the emergence of new domains of mass collaboration, and collective intelligence. (Agree/Disagree)
- The AMT, which provides largely repetitive and menial microtasks without minimum wage and worker protections, is exploitative. (Agree/Disagree)
- Technologists created this problem of the digital sweatshop with Amazon Mechanical Turk and technologists — the makers of Turkopticon — can come along and fix it. (Agree/Disagree)
- The AMT is a low-skill data sweatshop where Turkers simply follow instructions and can be programmed by employers with higher value skills and market-making intuitions. (Agree/Disagree)

Group exercise: Discuss your individual responses with your group and build consensus as to whether you agree or disagree with each of these propositions. Why or why not?

Recommended Readings:

- Irani, Lilly C, and M Six Silberman. 2016. “Stories We Tell About Labor: Turkopticon and the Trouble with ‘Design.’” In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, 4573–86. CHI ’16. New York, NY, USA: ACM.
<https://doi.org/10.1145/2858036.2858592>.
- Silicon Valley sustainability policies (read the phone you own!):
 - Apple Environmental Responsibility Report, 2019: <https://www.apple.com/environment/>
 - Apple Supplier Responsibility Report, 2019: <https://www.apple.com/supplier-responsibility/>
 - Samsung: <https://www.samsung.com/us/aboutsamsung/sustainability/environment/>

Theme #2(a) | Intellectual Property: Copyright (17-21 February 2020)

Moving on from the basics of understanding the relationship between ethics and information policy, the mutual shaping of information technology, law, and society, and the policy imperatives for computing ethics, we take our first step towards understanding how laws and policies work in practice. We start with the ‘balancing act’ of copyright law. As Jessica Litman explains:

We want authors to have enough control over their works to enable them to extract some of the commercial value of those works—that’s what lets them make a living creating works of authorship. At the same time, the purpose of the system is to benefit the public at large, and that works best when the rest of the value of the work can be enjoyed by the public at large. United States copyright law has until now divided up the value that inheres in works of authorship to permit authors (and their employers and publishers) to control and therefore profit from some uses of their works, while forbidding them from controlling others. Authors are given enough control to enable them to exploit their creations, while not so much that consumers and later authors are unable to benefit from the protected works. To take a simple example, copyright owners are entitled to prohibit others from making copies of their works, but copyright law gives them no rights to control whether or when people read them or use them (2006, 13).

However, in the last forty years, especially with the massive proliferation of internet and other digital technologies, a new threat has emerged for the copyright regime. In a networked world, “every individual with access to a computer will be able to perform the twenty-first-century equivalent of printing, reprinting, publishing, and vending. If the vast majority of them do not comply with the copyright law, then the copyright law is in danger of becoming irrelevant” (Litman 2006, 111).

This threat slowly shifted the focus on the ‘balancing act’ in copyright law to an economic model, “which characterizes copyright as a system of incentives. [...] The model derives a lot of its power from its simplicity: it posits a direct relationship between the extent of copyright protection and the amount of authorship produced and distributed—any increase in the scope or subject matter or duration of copyright will cause an increase in authorship; any reduction will cause a reduction” (Litman 2006, 79–80). Under this new model, Litman argues that *copyrights no longer operate on the metaphor of a ‘balancing act’ between authors and the public and have become more about copyright as property that authors are entitled to control*. While copyright traditionally has remained in the domain of business-to-business negotiations, it now directly implicates end users in controlling the distribution and consumption of copyrighted works. Faced with this shift, how do we move forward and reform copyright law? What principles do we put in practice for such reform?

Key question(s):

Does contemporary copyright law, especially with regard to digital goods and distribution, go too far, not far enough or is it just right?

- What would the consequences of a weakened/shortened/more limited copyright regime have for digital innovation and culture?
- What would the consequences of a strengthened/lengthened/more expansive copyright regime have for digital innovation and culture?
- Is copyright more problematic in some spheres of digital practice and production than others?

Key terms:

Regulatory capture; Copyright Act of 1976; Fair use doctrine; Derivative works; Transformational use; Orphan works; First sale doctrine; Sony v. Universal Studios (1984); Audio Home Recording Act of 1992; Digital Millennium Copyright Act of 1998; Safe harbor provision; Anti-circumvention provision; DMCA takedown procedures; A&M Records v. Napster (2001); MGM v. Grokster (2005); Viacom v. YouTube (filed 2007, settled 2014); Indirect infringement; Contributory infringement; Vicarious infringement; Downstream control of copyrighted works.

Required Readings:

Lecture #8: 17th February 2020

- Lehman, Jeffrey, and Shirelle Phelps, eds. 2005. "Copyright." In *West's Encyclopedia of American Law, Volume 3*, 2nd ed., 190–200. Detroit and London: Thomson Gale.
- Litman, Jessica. 2006. "Introduction" and "Copyright Basics." In *Digital Copyright*, 11-34. Amherst: Prometheus Books.

Lecture #9: 19th February 2020

- Aufderheide, Patricia, and Peter Jaszi. 2018. "How to Fair Use." In *Reclaiming Fair Use: How to Put Balance Back in Copyright*, 2nd Ed., 157–77. Chicago: University of Chicago Press.

Section #5: 21st February 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

Option #1: YouTube Takedown

"You created a hilarious (at least to you) commentary on common clichés of standup comics, and it received a lot of traffic when you posted it on YouTube. But suddenly your video disappeared. You are confident your unlicensed uses were entirely fair" (Aufderheide and Jaszi 2018, 73)?

Think-Group-Share exercise: What should be your response to the take down? What steps could you potentially take to get your video back up?

You need to revisit your arguments for your fair use of this material. You can get help by consulting the Code of Best Practices in Fair Use for Online Video. Then, if you are still confident that your uses were fair, you can find out what kind of removal it was. The Electronic Frontier Foundation has great online resources (for instance, <http://www.eff.org/issues/intellectual-property/guide-to-youtube-removals>) to help you figure it out. If you are confident that you have a good reason, depending on the kind of removal you can issue a dispute or a counternotice. A dispute is a simple explanation to YouTube of your fair-use reason for using the material, and it is usually resolved very quickly. In the case of a counternotice, you will have to provide information and agree to resolve the dispute in your local federal court as a jurisdiction should the copyright holder sue you—no matter how unlikely that may be. There was no evidence of a single lawsuit of a copyright holder against a typical

YouTube user, as of 2010. If the copyright holder does not contest your claim, the video goes right back up (Aufderheide and Jaszi 2018, 209).

Option #2: *Fair Use in Music Industry*

Did the 1990 Vanilla Ice's pop-rap crossover hit *Ice Ice Baby* sample the bass line to the 1981 Queen/Bowie collaboration *Under Pressure*? Ice famously insisted that the two melodies are distinct because he added a beat between notes [See: https://www.youtube.com/watch?v=ncHVW_WavSk and https://www.youtube.com/watch?v=HW_Rduet230]. Evaluate *Ice Ice Baby* along the four factors used to determine fair use: 1) the purpose and character of the use (commercial or educational, transformative or reproductive); 2) the nature of the copyrighted work (fictional or factual, the degree of creativity); 3) the amount and substantiality of the portion of the original work used; and 4) the effect of the use upon the market (or potential market) for the original work.

Group Exercise during Section: Key Court Cases in Digital Copyright

Prepare one-page summary for each of the following three cases, A&M Records v. Napster (2001), MGM v. Grokster (2005), and Viacom v. YouTube (filed 2007, settled 2014)

The summary should clearly convey: 1) the facts of the case (who were the parties involved and what happened?); 2) the key issues (what was the legal dispute here?); 3) the holding (what did the court decide?); and 4) the rationale (why did the court rule the way it did?)

Recommended Readings:

- Akula, John. n.d. "The US Legal System in a Peanut." Cambridge, MA: MIT. <https://mit.instructure.com/courses/840/files/112932/>.
- Litman, Jessica. 2006. "Revising Copyright Law for the Information Age." In *Digital Copyright*, 171-191. Amherst: Prometheus Books.
- Wikipedia, "Digital Millennium Copyright Act": https://en.wikipedia.org/wiki/Digital_Millennium_Copyright_Act (Note: this is a lengthy Wikipedia entry! Pay attention to cases and controversies around the anti-circumvention clause; the 'safe harbor' provision and DMCA takedown procedures; the periodic exemption process from the US Copyright Office; and criticisms and arguments for DMCA reform)
- New York Times Retro Report, "Napster Documentary: Culture of Free." *YouTube*. <https://www.youtube.com/watch?v=CKrdsGdLVQ8>
- Runtagh, Jordan. 2016. "Songs on Trial: 12 Landmark Music Copyright Cases." *Rolling Stone*, June 2016. <https://www.rollingstone.com/politics/politics-lists/songs-on-trial-12-landmark-music-copyright-cases-166396/ray-parker-jr-vs-huey-lewis-and-the-news-1984-63701/>.
- CMSI. n.d. "Fair Use in Online Video Discussion Clips." Center for Media & Social Impact. <https://cmsimpact.org/resource/fair-use-in-online-video-discussion-clips/>.
- EFF. n.d. "A Guide to YouTube Removals." *Electronic Frontier Foundation*. <https://www.eff.org/issues/intellectual-property/guide-to-youtube-removals>.

Theme #2(b) | Intellectual Property: Patents (26 February - 2 March 2020)

Copyright is just one domain of law and policies around managing intellectual property. In this deep dive, we will cover another equally expansive role of patents in protecting intellectual property. Simply put, the basic idea behind the patent system is to treat invention as a ‘public good’; it is cheaper to copy an invention than to build it. However, the patent system is in crisis. As Burk and Lemley elaborate:

Patent owners—and the Federal Circuit itself—are beset on all sides by those complaining about the proliferation of bad patents and the abuse of those patents in court. Congress, the Federal Trade Commission, the National Academy of Sciences, industry leaders, the press, academics, and even the Patent and Trademark Office (PTO) itself have all gotten into the act. They point to example after example: silly patents granted by the PTO; lawsuits filed by people who invented something decades ago against companies who do something very different today; patent claims so confusing that no one can be sure what the patent covers, even after a district court holds hearings on the subject; and the ability of those who own a patent on a small component to get control over most or all of a much larger product [...]

Lawyers and executives in the information technology industries almost invariably see the patent system as a cost rather than a benefit to innovation. Even companies with tens of thousands of patents generally use those patents only ‘defensively,’ to minimize the amount they must pay other patent owners to permit them to sell their products. Ask most of these companies and in their candid moments they will tell you that they would be better off without any patent system, or at least with one that was radically changed and that left them alone to innovate (2009, 3–4).

The crisis is particularly acute in the IT industry; it has become a poster child of troubles with the system. There is an ongoing patent war between smartphone manufacturers with companies such as Apple and Samsung filing a series of multinational lawsuits for patent infringement against each other.

Beginning in 2011, Apple has faced Samsung in a series of legal battles that spanned ten countries and four continents. Within the United States alone, these conflicts have transpired in three main jurisdictions: the Federal Courts, the International Trade Commission (“ITC”), and the USPTO. Specifically in the Federal Court system, this case has had an extensive journey—traveling all the way up to the Supreme Court of the United States [in 2016] and back down to the District Court [in 2017] (Gil 2017, 75)

The case was finally settled out of court in June 2018. Continuing with the theme of balancing protection in exchange for public disclosure, we will learn about the objectives of the patent system and its mechanics. What makes an invention patentable? After studying the procedures for tackling patent application, enforcement, and infringement, we will explore how these procedures work in the IT industry and the problems they encounter.

Key question(s):

Does contemporary intellectual property regime, especially in the context of information industry, go too far, not far enough, or is it just right?

- What would be the consequences of a weakened/shortened/more limited IP regime (copyright + patents) for the IT industries, and digital innovation and culture more generally?

- A strengthened/lengthened/more expansive IP regime?
- What about the trade-offs between a generalist vs. more specialized (or sector-specific) IP regime?
- What other reform measures might help address current problems and failures in IP law and policy?

Key terms:

Patentability; Utility patents; Design patents; Anticipation Doctrine; Patentable subject matter; Utility; Novelty; Non-obviousness; Enablement or Sufficiency of disclosure; Patent interference practice; PHOSITA; Prior art; Licensing; Defensive patenting; Patent pools; Patent enforcement; Willful infringement; Non-practicing entities or Patent trolls; Bad patents; Software patents; Patent thickets; Royalty stacking; Forum shopping; Patent Wars; Apple v. Samsung.

Required Readings:

Lecture #10: 26th February 2020

- Burk, Dan L, and Mark A Lemley. 2009. *The Patent Crisis and How the Courts Can Solve It*, 7-33. Chicago: University of Chicago Press.
- Levy, Steven. 2012. "The Patent Problem." *Wired*, November 2012. <https://www.wired.com/2012/11/ff-steven-levy-the-patent-problem/>.

Section #6: 28th February 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Lecture #11: 2nd March 2020

- Gil, Elizabeth M. 2017. "Samsung v. Apple: Taking a Bite Out of the Design Patent 'Article of Manufacture.'" *U. Miami Bus. L. Rev.* 25 (3): 67–88. <https://repository.law.miami.edu/umbl/vol25/iss3/5/>.
- Oliver, John. 2015. "Patents: Last Week Tonight with John Oliver (HBO)." *YouTube*. https://www.youtube.com/watch?v=3bxcc3SM_KA.

Group Exercises (either in lectures or sections):

Option #1: Are the design and utility patents for Apple iPhone bad patents?

Examine the following two design patents issued to Apple:

- U.S. Patent No. D504,889: Electronic device (filed in 2004, granted in 2005)
- U.S. Patent No. US8046721B2: Unlocking a device by performing gestures on an unlock image (filed in 2009, granted in 2011).

The five primary requirements for patentability are: (1) patentable subject matter, (2) utility, (3) novelty, (4) non-obviousness, and (5) enablement [For a quick overview of the five criteria, refer:

<https://www.law.cornell.edu/wex/patent>].

Recommended Readings:

- Kamdar, Adi, Daniel Nazer, and Vera Ranieri. 2015. “Defend Innovation: How to Fix Our Broken Patent System.” *Electronic Frontier Foundation*, San Francisco.
<https://www.eff.org/files/2015/02/10/eff-defend-innovation.pdf>.

Theme #3(a) | Telecom and Network Policy: Wired and Broadband (4-9 March 2020)

Moving onto the third theme, we explore American telecommunications law. We will follow the emergence of the policy framework around AT&T as a regulated monopoly. The history of regulation of AT&T differentiates the American system of regulating telecommunications from other countries, which have generally chosen the route of nationalizing telecommunications services. Chen divides the history of American telecommunications law into four distinct ‘ages’:

In each age, a dominant institution arose to address the perceived economic concerns of the day, only to run headlong against legal and political limits on its effectiveness. During the Age of Accommodation, which survived the passage of the Communications Act of 1934, state public utility commissions nurtured the Bell monopoly in its infancy. The Federal Communications Commission’s efforts to deregulate equipment manufacturing and long distance defined Age of Anxiety in the 1950s, 1960s, and 1970s. During the twelve-year Age of Antitrust, the Modified Final Judgment attempted to confine the divested Bell companies to the last of their monopolies, local carriage. Today’s Age of Anticipation, heralded by the 1996 Act, boasts numerous strategies for enhancing entry and competition throughout the industry. Telecommunications reform has been shaped by client politics, institutional stagnation and reform, imperfect economic competition, and technological innovation. [...] Far from converging into a single coherent body of policy, telecommunications law will continue to reflect longstanding tensions within legal process and political economy of American telephony (Chen 1997, 835).

It is important to note here that Chen’s article was published in 1997. *The battles over access to internet and net neutrality were just about starting then, which ultimately led to emergence of a new ‘age’ in the regulatory history of telecommunications in America with control over network quality and pricing increasingly becoming the core issues to regulate.*

In 2005 two major actions [US Supreme Court judgment on National Cable & Telecommunications Association (NCTA) v. Brand X Internet Services and FCC’s August 2005 information services classification order] dramatically changed the regulatory landscape as it applied to broadband services, further fueling the net neutrality debate. In both cases these actions led to the classification of broadband internet access services as Title I information services, thereby subjecting them to a less rigorous regulatory framework than those services classified as telecommunications services. [...] As a result, neither telephone companies nor cable companies, when providing broadband services, are required to adhere to the more stringent regulatory regime for telecommunications services found under Title II (common carrier) of the Communications Act of 1934 (Gilroy 2019, 1).

Ironically, today’s debates over network neutrality and discriminatory carriage echo the same essential problems and elements that undergirded the efforts to regulate AT&T over the course of the 19th century.

Key question(s):

In the history of telecommunications law, telephony services have been considered services of public utility regulated through Title II (common carrier) of the Communications Act of 1934, which imposes rigorous antidiscrimination, interconnection, and access requirements. Should your broadband Internet also be considered a public utility and subjected to common carrier requirements?

Key terms:

Network effects; Economies of scale and scope; Switching costs; Natural monopoly; Monopoly leveraging; Regulated monopoly; Interconnection policy; Kingsbury Commitment (1913); Title I and II of the Communications Act of 1934; Common carrier requirements; Universal service; Internal cross-subsidies; Rate of return; Gold plating; AT&T Consent Decree of 1956; AT&T divestiture (1982/1984); Structural separation; Unbundling; Number portability; The Communications Act of 1996; Regulatory forbearance; Regulatory parity; Convergence; NCTA v. Brand X Internet Services (2005); FCC Inquiries; FCC Orders.

Required Readings:

Lecture #12: 4th March 2020

- Wu, Tim. 2009. “A Brief History of American Telecommunications Regulation.” In *Oxford International Encyclopedia of Legal History*, edited by Stanley N. Katz. Oxford: Oxford University Press. https://scholarship.law.columbia.edu/faculty_scholarship/1461/.
- Minhaj, Hasan. 2019. “Why Your Internet Sucks | Patriot Act with Hasan Minhaj | Netflix.” *YouTube*. 2019. <https://www.youtube.com/watch?v=xw87-zP2VNA>.

Section #7: 6th March 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Lecture #13: 9th March 2020

- Chen, Jim. 1997. “The Legal Process and Political Economy of Telecommunications Reform.” *Columbia Law Review* 97 (4): 835–73. <https://www.jstor.org/stable/1123309>.
- Lepore, Jill. 2018. “The Hacking of America.” *New York Times*, September 14, 2018. <https://www.nytimes.com/2018/09/14/sunday-review/politics-disruption-media-technology.html>.

Group Exercises (either in lectures or sections):

This is a mock court case exercise. Divide your group into three teams: NCTA representatives, Brand X representatives, and SCOTUS judges.

Facts of the case: Title II of the Communications Act of 1934, which was amended in 1996, subjected providers of ‘telecommunications service’ to mandatory common-carrier regulation. The FCC concluded that this did not include broadband cable companies. The Ninth Circuit reversed and cited its own previous opinion that had held that broadband cable service was a ‘telecommunications service.’¹

Role of representatives: Consider and build your arguments for your party. Listed below are a couple of actual arguments² made by them in courts:

- Brand X argued that internet services should be classified as a telecommunications services, because the word telecommunications means communication at a distance, and includes services

¹ Source: Oyez.org’s entry on NCTA v. Brand X Internet Services. <https://www.oyez.org/cases/2004/04-277>

² Source: Wikipedia entry on NCTA v. Brand X Internet Services.

https://en.wikipedia.org/wiki/National_Cable_%26_Telecommunications_Ass%27n_v._Brand_X_Internet_Services

such as telegraph, telephone, and television, all of which are essentially digital telecommunications services. If Internet were to be considered a telecommunications service, then telephone companies would be required to act as common carriers, with a published price list and other competitive requirements. This would allow rivals like Brand X Internet, AOL and EarthLink to offer faster internet connections.

- NCTA argued first that the Telecommunications Act defined information services as “the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing.” Offering internet services was more than just providing telecommunication services. Thus, telephone and cable high speed data services were information services not subject to the same regulations as telecommunications services.

Role of judges is to decide on the question: Did the FCC lawfully interpret the Communications Act of 1934 by deciding that broadband cable companies did not provide a ‘telecommunications service?’ Why?

Recommended Readings:

- Nuechterlein, Jonathan E., and Philip J. Weiser. 2005. *Digital Crossroads: American Telecommunications Policy in the Internet Age*. Cambridge, MA: MIT Press. (“The Big Picture” (pp. 1-30) and sections on “Monopoly Leveraging Concerns and the Internet” and “The History and Economics of Monopoly Leveraging Concerns in the Internet Marketplace” (pp. 149-158)).
- Gilroy, Angele A. 2019. “The Net Neutrality Debate: Access to Broadband Networks.” *Congressional Research Service*, Washington, DC.
<https://crsreports.congress.gov/product/pdf/R/R40616>. [You may skim/skip the section on Congressional Activity, pp. 16-27]

Theme #3(b) | Telecom and Network Policy: Wireless and Spectrum (11-16 March 2020)

Moving on from wired to wireless communication, we explore how regulation matters in managing the physically scarce resource of broadcast spectrum. Tim Wu recounts the two models of spectrum regulation:

The Radio Act of 1927 established that “the spectrum would be publicly owned, that the government would regulate entry into the business of broadcasting, and that it would grant broadcasting licenses only ‘if public convenience, interest or necessity will be served thereby’” (Wu 2009, 4).

In the 1990s, the FCC also took its first steps away from the traditional model of spectrum management it had employed since the 1930s. Whereas previously the FCC allocated licenses either by lottery or to whomever it believed would ‘best serve the public interest,’ [command and control model] in 1994 it conducted the first spectrum auctions, granting the licenses to the highest bidder [auction and secondary markets model]. While not free from controversy, the auctions have generally been thought to have been a success, as they led both to the market entry of new cellular phone firms, such as long-distance provider Sprint, and proved to be a more streamlined way of awarding licenses, which has encouraged the timely building of networks. The FCC has conducted several other spectrum auctions since 1994, frequently at Congress’s direct command (Wu 2009, 8).

The policies on managing spectrum have been additive. The command and control model from 1930s have persisted on certain frequencies, while other frequencies were managed through a market-based approach of auctions since the 1990s. In the auction model, the spectrum was imagined as a market in long-term property holdings (anchored in the work of Ronald Coase). However, the 2000s have seen a gradual emergence of a commons model of spectrum allocation. As Yochai Benkler puts it,

‘The central question . . . is no longer *how to allocate spectrum channels* — how to decide who makes unilateral decisions about who may communicate using a frequency band and for what types of communications — but *whether to coordinate by defining channel allocations.*’ [...] The argument was that as computation becomes very cheap, the wireless equipment market can provide solutions that will allow devices to negotiate clearance of their communications without anyone asserting exclusivity over a defined channel, whether that exclusivity is long-term or dynamically leased. The choice becomes one between (1) the Internet model of markets built on smart devices and the services that can be built from networking them and (2) the telecommunications services model of markets built on exclusive proprietary claims to frequencies (2012, 82–83, emphasis in original).

Key question(s):

- Nobody (even long-term incumbents) owns their spectrum: should we nevertheless act as though they do?
- Is long-term innovation and efficient allocation in this space best supported by property rights (Coase) or by commons models of spectrum allocation (e.g. extending unlicensed spectrum use) – or some mix thereof?

- What are the implications for network neutrality (in wireless broadband + data)? Given spectrum scarcity, should wireless providers be (partly) exempt from network neutrality provisions (and if so, which parts)?

Key terms:

Spectrum crunch; Rationale for broadcast regulation; Interference; Licensing; Mechanics of spectrum regulation; Allocation; Allotment; Assignment; White spaces; Guard bands; Title III of the Communications Act of 1934; Command-and-control model; Property model of spectrum reform; Commons model of spectrum reform; Reasonable network management; Reverse and forward auctions; Repacking; Tragedy of the commons.

Required Readings:

Lecture #14: 11th March 2020

- NTIA. 1991. “Basic Elements of Spectrum Management.” *Federal Spectrum Management: A Guide to the NTIA Process*. <https://www.ntia.doc.gov/book-page/basic-elements-spectrum-management>.
- Smith, Ernie. 2017. “A Short History of Wireless Spectrum, the Most Complicated Puzzle You’ve Ever Seen.” *Motherboard*. https://motherboard.vice.com/en_us/article/mbjpb/a-short-history-of-wireless-spectrum-the-most-complicated-puzzle-youve-ever-seen.

Section #8: 13th March 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Lecture #15: 16th March 2020

- Benkler, Yochai. 2012. “Open Wireless vs. Licensed Spectrum: Evidence from Market Adoption.” *Harvard Journal of Law & Technology* 26 (1): 71–163. <https://ssrn.com/abstract=2211680>. [This is a long article to read, you may skim/skip: pp. 84-100, of ‘Section III. The Academic Debate’ (read ‘A. Background’ section) and pp. 108-142, of ‘Section IV. Evidence from Markets’ (read ‘1. Mobile Broadband’ section)]

Group Exercises (either in lectures or sections):

Think-Group-Share prompt: Consider the following examples of auction strategies to allocate spectrum. Which of these is the best strategy and why?:

- A spectrum regulator proposes to assign a single license for the provision of a national 5G mobile telephone service for United States. The successful applicant must commit itself to providing coverage to 50% of the land area and 80% the population. Sealed bids must be submitted by a specified date, by firms which have pre-qualified (i.e. have shown their competence to become a licensee). The winner is the firm which bids the most.
- US territory is divided into, for instance, twenty areas, and three (identical or similar) licenses are auctioned in each area (sixty in all). Pre-qualified applicants bid against each other in an open bidding auction. They have the opportunity to submit new bids for the licenses at pre-specified intervals. At each round, a firm can bid for one license in each region. This procedure makes it

possible for firms to put together a national service by bidding in all areas simultaneously. At the opposite extreme a firm can bid to provide a local service in one area only. The auction ends when the winning bids for each license are the same, in terms of bidder and sum bid, as they were in the previous round. To ensure completion of such an auction, firms must be made to bid at regular intervals of time.

You are expected to think independently about your answer (and possibly jot notes for yourself). After three minute or so, you will start a discussion in your group. Compare your thoughts in group discussion. The group needs to reach a consensus within five minutes and pick the most convincing strategy out of two. We will go around the class and ask groups at random to share their choice of strategy and the rationale for their choice with the whole class.

Recommended Readings:

- Coase, Ronald. 1959. "The Federal Communications Commission." *Journal of Law and Economics* 2: 1–40. <https://www.jstor.org/stable/724927>.

Theme #3(c) | Telecom and Network Policy: Net Neutrality Debate (March 18-20, 2020)

We have covered aspects of the history of the net neutrality debate over the past two deep dives, now *its time to get our hands dirty by working through the key issues, varying positions, specific policy proposals, and principal stakeholders in the current net neutrality debate*. At the heart of the debate is the problem of defining net neutrality. As Gilroy explains: “There is no single accepted definition of ‘net neutrality.’ However, most agree that any such definition should include the general principles that owners of the networks that compose and provide access to the internet should not control how consumers lawfully use that network, and they should not be able to discriminate against content provider access to that network” (2019, 1). Greenstein, Peitz and Valletti outline the following trade-offs to map the net neutrality debate:

Three facets of the [internet] shape the net neutrality policy debate and arise in any economic model of this setting: complementarity between inputs provided by different firms; the direction and size of the flow of traffic and the flow of payments; and potential market power by some firms—in particular, internet service providers. [...]

Complementarity among inputs is almost synonymous with how the internet works, because what defines the modern internet is that it sends data from many locations to many locations. A broadband connection without access to any content is as useless as an online application without any broadband connectivity. An end user needs both. Here we see the three main players [...]: internet service providers such as Comcast, Verizon, or Vodafone; content providers such as Amazon, Facebook, Google, Netflix, Skype; and end users. [...]

A major source of confusion [...] arises from the many uses of the internet. Four types of different uses employ essentially the same internet processes: 1) static web browsing and e-mail, which tend to employ low bandwidth and can tolerate some delay; 2) video downloading, which can employ high bandwidth and can tolerate some delay; 3) voice-over IP, video-talk, video streaming, and multi-player gaming, which tend to employ high bandwidth and whose quality declines with delay; and 4) peer-to-peer applications, which tend to use high bandwidth and can tolerate delay, but can impose delay on others [...]. Over time, the growth of the latter three applications has changed the scale and flow of data traffic on the internet, and this brought the treatment of traffic to the fore. [...]

The fact that most households have a very limited choice of broadband internet service providers adds an additional element to the policy concerns about these arrangements, motivating questions about an internet service provider’s use of its market power vis-à-vis end users and content providers. As part of its 2015 Broadband Progress report for the United States, for example, the FCC found that a limited percentage of US households had access to a provider of broadband at 25 Mbps or more, and 20 percent had no access [...]. Thus, an internet service provider (ISP) may enjoy a strong position in contractual negotiations with content providers, as it provides exclusive access to consumers who seek high-bandwidth services (2016, 129–31).

Key question(s):

Should your telecommunications or internet service provider be allowed to differentiate or discriminate on basis of source, traffic type, or content? (where ‘differentiate’=mapping content with pricing of and efficiency in flow of data traffic and ‘discriminate’=block, throttle, or offer preferential treatment)

Key terms:

Title I and II of the Communications Act of 1934; Common carrier requirements; Blocking; Throttling; Preferential treatment; Paid prioritization; Data caps; Zero-rating plans or Sponsored data plans; Metered/usage-based billing; Deep packet inspection; Comcast v. FCC; FCC 2010 Open Internet Order; Verizon Communications Inc. v. FCC; FCC 2017 Order.

Required Readings:

Lecture #16: 18th March 2020

- Gilroy, Angele A. 2019. “The Net Neutrality Debate: Access to Broadband Networks.” *Congressional Research Service*, Washington, DC.
<https://crsreports.congress.gov/product/pdf/R/R40616>. [You may skim/skip the section on Congressional Activity, pp. 16-27]
- Exemplary policy memos written by previous students of this class [Available on Blackboard].
- Oliver, John. 2014. “Net Neutrality: Last Week Tonight with John Oliver (HBO).” *YouTube*.
<https://www.youtube.com/watch?v=fpbOEoRrHyU>.
- Oliver, John. 2017. “Net Neutrality II: Last Week Tonight with John Oliver (HBO).” *YouTube*.
<https://www.youtube.com/watch?v=92vuuZt7wak>.

Section #9: 20th March 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

This is in-class debate exercise. Your group should have already received two propositions in your previous section meeting. The propositions are so formulated that proposition 2 is the contrary of proposition 1. You will be defending your proposition in pairs. The rest of the members of the group will be judges and one of them will keep time for the debate.

One of the pair defending proposition 1 will be given 5 minutes to do so in what will be called an ‘opening statement.’ The spokesperson from the pair defending proposition 2 (which states the converse of proposition 1) will then be given the opportunity to defend his or her proposition. In the ‘response’ which follows the other member of the pair defending proposition 1 will have 3 minutes to respond to their opponent’s opening statement, on the basis of notes made during that statement. The second member of the pair defending proposition 2 will then have their 3 minutes to respond. Lastly each pair will have two minutes to produce a closing argument. It will therefore take $(2 \times 5 + 2 \times 3 + 2 \times 2 = 20)$ minutes to complete the debate.

Examples of Propositions:

Proposition #1	End of net neutrality means end of free expression of ideas on the internet.
Proposition #2	End of net neutrality means creating a free marketplace for ideas on the internet.
Proposition #1	Actual net neutrality would ensure that winners and losers aren't picked by regulators, but the consumers in the market itself.
Proposition #2	Actual net neutrality would ensure that regulators manage universal and fair access to internet as a public utility.
Proposition #1	Repealing net neutrality will slow down the internet
Proposition #2	Repealing net neutrality will spur growth of the internet

One member among the judges will use a stopwatch to monitor the debate. Judges will also indicate the quality of contributions to the debate, using the assessment forms provided below. Where possible the judges will be assisted by a senior student who has already completed the course or teaching assistants, so as to create a genuine jury. A no-holds-barred approach will be taken to analysis and argument in this debating competition. Clearly this will be impossible without proper preparation of the content as well as revision of content on the third theme. Even if you are thoroughly conversant with your own case, you never know what your opponents might come up with!

The aim of the debating competition is to give students some practice in analyzing a problem and with the reasoned defense or attack of a particular position in relation to that problem. This is something you may frequently be required to do in later professional life. The judges' assessments should be primarily content-based and organized around the factors listed below.

Assessment form:

Factors for assessing the debate	Points: 1-5
<i>Defense of Proposition</i>	
Relevance of arguments	
Support for arguments	
Quantity of arguments	
Structure of arguments	
Overall Presentation of Proposition	(out of 20)
<i>Countering of opponent's arguments</i>	
Relevance of counterarguments	
Support for counterarguments	
Quantity of counterarguments	
Structure of counterarguments	

Overall Rebuttal of Opponent’s Proposition	(out of 20)
<i>Closing Argument</i>	
How convincing are the concluding remarks?	
Build up from previous arguments already made	
Overall conclusion of Proposition	(out of 10)
<i>Style</i>	
Verbal Presentation (comprehensibility and variation in voice)	
Non-verbal presentation (posture, gestures)	
Humor	
Overall Style	(out of 15)
Total Score	(out of 65)

Recommended Readings:

- Larry Downes, “The Tangled Web of Net Neutrality and Regulation,” *Harvard Business Review*, <https://hbr.org/2017/03/the-tangled-web-of-net-neutrality-and-regulation>
- Wu, Tim. 2003. “Network Neutrality, Broadband Discrimination.” *Journal of Telecommunications and High Technology Law* 2: 141–79. <http://dx.doi.org/10.2139/ssrn.388863>.
- Greenstein, Shane, Martin Peitz, and Tommaso Valletti. 2016. “Net Neutrality: A Fast Lane to Understanding the Trade-Offs.” *Journal of Economic Perspectives* 30 (2): 127–50. <https://doi.org/10.1257/jep.30.2.127>.
- Brian Barrett, “Fight: The WIRED Guide to Network Neutrality,” *Wired Magazine*, Dec 14, 2017. <https://www.wired.com/story/net-neutrality-fight-wired-guide/>
- Orin Kerr, “One Law Professor’s Overview of the Confusing Net Neutrality Debate,” *Washington Post*, Nov 28, 2017. http://wapo.st/2jugYq9?tid=ss_mail&utm_term=.785027d16a79

Theme #4(a) | Competition, Antitrust, and Freedom of Expression: Emerging Monopolies (23-27 March 2020)

In the previous weeks, we have followed how AT&T became a regulated monopoly in the telecom industry. It was also a primer for questions of antitrust regulation with the emergence of new technology companies that mimic the old AT&T monopoly. As Martinez puts it:

As [...] the chorus of complaint against Big Tech reaches a crescendo, could Bezos and his fellow giants end up in the government's crosshairs? It's unlikely, mostly because the tech world is fundamentally different today than it was in 1998 while US antitrust laws are essentially the same. To use a geopolitical analogy, technology was then a unipolar world and Microsoft its lone superpower. The tech world has since become multipolar: Facebook, Amazon, Google, Apple, and (a reduced) Microsoft are near--absolute monarchs of their respective domains. No single giant can dominate any other, and one company can coerce another only with great difficulty, if at all. The prospect of Facebook twisting Apple's arm to ship a new iPhone without any social media apps except for Facebook's—which is more or less what Microsoft supposedly did to Apple with Explorer—is unthinkable.

Today's titans tower over their kingdoms, secure behind their walls of user data and benefiting from extreme network effects that make serious competition from startups nearly impossible. US antitrust laws, written in the industrial age, don't capture many of the new realities and potential dangers of these vast data empires. Maybe they should (Martinez 2018).

Antitrust laws are regulatory tools designed to promote free market competition and “aim to protect economic competition by prohibiting collusive, exclusionary, and monopolistic practices that restrain competition and thereby pose a danger of increased prices and reduced output, quality, and innovation” (May 2002, 29).

Federal antitrust law is founded on three main enactments. Section 1 of the Sherman Act of 1890, the most important of these acts, focuses on group behavior in broadly banning ‘[e]very contract, combination or conspiracy’ in restraint of interstate or foreign trade or commerce; Section 2 primarily targets the activities of individual firms in its prohibition of monopolization and attempted monopolization. The Clayton Act of 1914 specifically addresses the competitive dangers arising from price discrimination, ‘tying’ arrangements, exclusive dealing, mergers, and interlocking directorates. The Federal Trade Commission Act of 1914 sweepingly empowers the administrative agency it establishes to police ‘unfair methods of competition’ (May 2002).

Designed in reaction to economic changes in the late 19th and early 20th century, we will assess their applicability to IT industry in the 21st century.

Key question:

Is there an antitrust case against Amazon, Facebook or Google today? Are these firms like AT&T in the 1970s, or Microsoft in the 1990s? How would you assess the current state of market concentration in the IT industry based on existing antitrust law and policy?

- Should we think about antitrust and concentration in the media/comm/tech industries differently than in other commodity markets (like beer, cars, etc.)? Why?

- Are monopolies always bad (or something antitrust regulators should concern themselves with)?
- How to evaluate the economic consequences of mergers and acquisitions and what would it mean for consumers?

Key terms:

Network effects; Economies of scale; Switching costs; Marginal Costs; Monopoly; Monopoly leveraging; History and economics of monopoly and antitrust; Sherman Act of 1890; Clayton Act of 1914; Federal Trade Commission Act of 1914; Objectives and mechanics of antitrust regulation; Anticompetitive cooperation or collusion; Cartels; Price fixing; Bid rigging; Market allocation; Predatory pricing; Refusals to deal; Abuse of dominance; Mergers and Acquisitions; Ex-ante review; Substitutes and Complements; Antitrust safety zones; Market definition; Market power; Market concentration; Market segmentation; Herfindahl-Hirschman Index (HHI); Consumer Protection; Unfair and deceptive trade practices; Minimum quality standards; False advertising; Adequate disclosure; Liability and compensation; Price elasticity; Price Discrimination (first, second, and third degree); Consumer surplus; Producer surplus.

Required Readings:

Lecture #17: 23rd March 2020

- Kwoka, John, and Lawrence White. 2013. "Introduction," and "The Economic and Legal Context." In *The Antitrust Revolution: Economics, Competition, and Policy*, 6th ed., 1-33. Oxford: Oxford University Press.
- Martinez, Antonio Garcia. 2018. "What Microsoft's Antitrust Case Teaches Us About Silicon Valley." *Wired*, February 11, 2018. <https://www.wired.com/story/what-microsofts-antitrust-case-teaches-us-about-silicon-valley/>.

Lecture #18: 25th March 2020

- May, James. 2002. "Antitrust Law." In *The Oxford Companion to American Law*, edited by Kermit L. Hall, 28–33. Oxford: Oxford University Press.
- U.S. Department of Justice. n.d. "Antitrust Enforcement and the Consumer." Washington, DC. <https://www.justice.gov/atr/antitrust-enforcement-and-consumer>.
- U.S. Department of Justice. n.d. "Price Fixing, Bid Rigging, and Market Allocation Schemes: What They Are and What to Look For." Washington, DC. <https://www.justice.gov/atr/price-fixing-bid-rigging-and-market-allocation-schemes>.
- Minhaj, Hasan. 2018. "Amazon | Patriot Act with Hasan Minhaj." YouTube. 2018. <https://www.youtube.com/watch?v=5maXvZ5fyQY>.

Section #10: 27th March 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

The following table provides market share of major smartphone manufacturing companies in the United States in the first quarter of 2019:

US Smartphone Shipments Market Share (%)	2019 Q1
Apple	39%
Samsung	28%
LG	11%
Motorola	8%
Other	14%
<i>Source:</i> Team Counterpoint. 2019. "US Smartphone Market Share: By Quarter." <i>Counterpoint Research</i> . https://www.counterpointresearch.com/us-market-smartphone-share/ .	

Calculate HHI and evaluate the smartphone market concentration in United States. What should be your regulatory response if LG proposes to acquire Motorola?

Recommended Readings:

- Sawyer, Laura Phillips. 2019. "US Antitrust Law and Policy in Historical Perspective." HBS Working Paper #19-110. Cambridge, MA. <https://hbswk.hbs.edu/item/us-antitrust-law-and-policy-in-historical-perspective>.
- Priest, George L. 2008. "The Abiding Influence of The Antitrust Paradox: An Essay in Honor of Robert H. Bork." *Faculty Scholarship Series* 643. https://digitalcommons.law.yale.edu/fss_papers/643.
- Rey, Jason Del. 2019. "The Making of Amazon Prime, the Internet's Most Successful and Devastating Membership Program." *Vox Media*. 2019. <https://www.vox.com/recode/2019/5/3/18511544/amazon-prime-oral-history-jeff-bezos-one-day-shipping>.
- Noam, Eli, and The International Media Concentration Collaboration. 2016. "Introduction" and "Media Concentration in the United States." In *Who Owns the World's Media?: Media Concentration and Ownership around the World*, 3-15 and 500-574. New York: Oxford University Press.

Theme #4(b) | Competition, Antitrust, and Freedom of Expression: IT and the First Amendment (6-10 April 2020)

The First Amendment to the US Constitution forms the bedrock of American democracy. As the editors of the *Encyclopedia of the First Amendment* elaborate:

However imperfectly Americans understand or honor the principles embodied in the core First Amendment freedoms, most would express pride in them—in worshiping or not worshiping according to the dictates of their conscience, expressing their opinions, assembling and associating with whomever they please, and petitioning the government. Hardly anyone would restrict any of these rights as they apply to themselves however much they might be tempted to constrain their application to others whose beliefs or behaviors they find distasteful or even abhorrent [...]

As American colonists approached independence, freedoms later embodied in the First Amendment assumed increasing importance. After ratification of the Constitution, citizens demanded that these rights be embodied in a bill of rights. Each subsequent period in U.S. history has added context to these guarantees, allowing contemporaries to draw valuable lessons not only from those times when such rights triumphed but also from times when they were jeopardized (R Vile, Hudson Jr., and Schultz 2009, lxxxv).

We will explore how the First Amendment has been interpreted over US history and how it applies in the context of the rise of internet and communication over social media:

We have handed to private companies the power to set and enforce the boundaries of appropriate public speech. That is an enormous cultural power to be held by so few, and it is largely wielded behind closed doors, making it difficult for outsiders to inspect or challenge. Platforms frequently, and conspicuously, fail to live up to our expectations. [...]

The social media companies that have profited most have done so by selling back to us the promises of the web and participatory culture. But those promises have begun to sour. While we cannot hold platforms responsible for the fact that some people want to post pornography, or mislead, or be hateful to others, we are now painfully aware of the ways in which platforms invite, facilitate, amplify, and exacerbate those tendencies.

For more than a decade, social media platforms have portrayed themselves as mere conduits, obscuring and disavowing their active role in content moderation. But the platforms are now in a new position of responsibility—not only to individual users, but to the public more broadly. As their impact on public life has become more obvious and more complicated, these companies are grappling with how best to be stewards of public culture, a responsibility that was not evident to them—or us—at the start.

For all of these reasons, we need to rethink how content moderation is done and what we expect of it (Gillespie 2018).

Key question:

The First Amendment was crafted in a moment when intermediaries were fewer in type (only the press) and greater in number (so that intermediary power to curb/shape speech was less profound). As

intermediary market becomes more concentrated, and electronic media (broadcast then social media) become more central sites for the sharing of speech, potential conflicts between individual citizen speech rights and the speech rights of large intermediaries (platforms) grow; and the outcomes matter more.

- What are the threats to freedom of speech in the 21st century and what is the role of gatekeepers in its everyday exercise (government, other kinds of speech intermediaries, etc.)?
- What are the rights (and responsibilities) of speech intermediaries, whether press, or broadcasters, or Facebook, or other social media platforms especially under conditions of ‘market failure’ (where effective access and competition amongst intermediaries is partial or limited)?

Key terms:

Espionage Act of 1917; Abrams v. United States (1917); Whitney v. California (1927); Clear and present danger test; Prior restraint; Enforced speech; Chilling effects; Criminal incitement; Libel; Slander; Fighting Words; Chaplinsky v. New Hampshire (1942); Hate speech; Marketplace of ideas; Actual malice standard; Sullivan v. New York Times (1964); Two traditions of First Amendment Interpretation: Literal and Interventionist; Speech intermediaries; Hierarchy of speech; Balance of speech rights; Fairness doctrine; Right of reply; Red Lion v. FCC (1969); Miami Herald v. Tornillo (1974); FCC v. Pacifica Foundation (1978); Regulatory activism; Regulatory forbearance; Echo chambers; Filter bubbles; Bland v Roberts (2013); Zhang v Baidu (2014); Carpenter v. North Carolina (2017);

Required Readings:

Lecture #19: 6th April 2020

- R Vile, John, David L Hudson Jr., and David Schultz. 2009. “Introduction.” In *Encyclopedia of the First Amendment*, edited by John R Vile, David L Hudson Jr., and David Schultz, lxxv–lxxxii. Washington, DC: CQ Press.
- O’Neil, Robert M. 2009. “Freedom of Speech.” In *Encyclopedia of the First Amendment*, edited by John R Vile, David L Hudson Jr., and David Schultz, 10–17. Washington, DC: CQ Press.
- Policinski, Gene. 2009. “Freedom of the Press.” In *Encyclopedia of the First Amendment*, edited by John R Vile, David L Hudson Jr., and David Schultz, 18–21. Washington, DC: CQ Press.
- Auerbach, Bruce E. 2009. “Incorporation of the First Amendment.” In *Encyclopedia of the First Amendment*, edited by John R Vile, David L Hudson Jr., and David Schultz, 27–31. Washington, DC: CQ Press.

Lecture #20: 8th April 2020

- Wired Magazine Special Issue. 2018. “Free Speech, Tech Turmoil, and the New Censorship.” *Wired*, February 2018. <https://www.wired.com/2018/01/free-speech-issue/>.
- Gillespie, Tarleton L. 2018. “How Social Media Set the Limits of What We Can Say Online.” *Wired*, June 2018. <https://www.wired.com/story/how-social-networks-set-the-limits-of-what-we-can-say-online/>.

Section #11: 10th April 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

Option #1: Unpacking “marketplace of ideas”

Think-Group-Share exercise: Justice Oliver Wendell Holmes believed that the purpose of the First Amendment was to protect the marketplace of ideas so that strong ideas could triumph over weak ones. Justice Louis Brandeis believed that the purpose of the First Amendment was to make citizens free to develop their faculties of deliberation and discussion so that they could achieve a shared understanding of the truth.

Are these views in tension with each other? (Yes/No)

- If yes, then which view do you find more convincing and why?
- If no, then how are they similar?

Option #2: George Carlin’s “Filthy words”

Think-Group-Share exercise: Can broadcasting George Carlin’s “Filthy Words” monologue be prohibited on the grounds of indecency, obscenity, and profanity? [See: <https://www.youtube.com/watch?v=vbZhp3sQxQ>]. Evaluate whether the First Amendment denies government any power to restrict the public broadcast of indecent language in any circumstances.

On the one hand, an argument can be made that the monologue as sexual speech has lower value and is not entitled to as much protection as political speech. On the other hand, approving censorship of speech solely because of the words they contain is myopic and violates First Amendment rights of the broadcasting company.

Would your reasoning change if you were to consider exposure of minors to such profane and indecent speech?

Recommended Readings:

- Free Speech Center and the John Seigenthaler Chair of Excellence in First Amendment Studies. n.d. “The First Amendment Encyclopedia.” *Middle Tennessee State University Website*. Accessed December 7, 2019. <https://www.mtsu.edu/first-amendment/encyclopedia>.
- Horwitz, Robert B. 1991. “The First Amendment Meets Some New Technologies.” *Theory and Society* 20 (1): 21–72. <https://doi.org/10.1007/BF00160733>.

Theme #4(c) | Competition, Antitrust, and Freedom of Expression: Regulating Platform Speech and Fake News (April 13, 2020)

Continuing with thinking through the challenges of protecting First Amendment rights in a digital world, we will look at the specific case of freedom of expression over the Internet. Specifically, we will focus on hate speech, fake news, and the difficulties of content moderation on social media platforms:

Making a decision as to whether a specific message can be identified as ‘unlawful hate speech’ and, as such, should or could legitimately be prohibited, is a fairly complex task. It requires an analysis of all the circumstances of a given instance of ‘hate speech’, which, in turn, demands a deeper understanding of the local and regional context in its political, economic, social and cultural dimensions, as well as a strong knowledge of [... legal] standards and relevant case-law. [A similar argument could easily be made for fake news stories too, where deliberate disinformation can make the task of differentiating them from legitimate new stories difficult.

In response to these problems,] the ongoing legal and policy debates related to content moderation by social media companies on their platforms are hindered by the difficulty in appropriately classifying the role played by these companies in the modern media landscape. While it is clear that tech giants have a genuine capacity to influence public debates online, identifying the actual impact they have on their audiences or determining an appropriate response to their perceived power remains a complex undertaking. Existing institutions, and legal and regulatory frameworks have been elaborated to deal with traditional media actors, and, as such, their application to new actors is at the very least uneasy. At the same time, in a number of countries the regime of limited liability [for example, the United States], which has allowed Internet intermediaries (including social media platforms) to act as efficient enablers of freedom of expression, has been put under increasing pressure (Article 19 2018, 6).

These debates are immensely important for preserving ideals of democratic governance, where everyone has and is encouraged to exercise their voice. It is also important to ensure that any measures related to content regulation on social media platforms, including ‘hate speech’, are compatible with the spirit of the First Amendment and the freedom of expression and association that it guarantees. Developing these measures opens a Pandora’s box of unresolved questions:

What kind of content gets reported, confirmed, and escalated? How are the criteria for judging determined? Who is empowered to rethink these criteria? How are general guidelines translated into specific rules, and how well do these rules fit the content being uploaded day in and day out? How do those involved, from the policy setter down to the freelance clickworker, manage the tension between the rules handed to them and their own moral compass? What kind of contextual and background knowledge is necessary to make informed decisions, and how is the context retained or lost as the reported content passes from point to point along the chain? What kind of valuable speech gets caught in this net? What never gets posted at all, that perhaps should? (Gillespie 2012)

Key question:

- Are there appropriate *public policy* responses to hate speech, echo chambers, and fake news problems? Should these responses be supervised by existing agencies (FCC, FTC, courts, etc.)?

- Is new law or regulatory actor needed or appropriate?
- Is there an appropriate *corporate policy* response to the echo chambers and fake news problems? What should key speech intermediaries or platforms like Facebook, Google, Twitter, etc. do?
- What is the role of the First Amendment in these policy responses?

Key terms:

Hate Speech; Fake news; Yellow Journalism; Content Moderation; Terms of Service; Content Guidelines; Echo chambers; Filter bubbles; Confirmation bias; Clickbait; Satire/Parody; Facebook Jail; Harmful content; Flagging; Election integrity; Privacy; Data portability; Suspension Notice; Appealing Content Moderation Decisions.

Required Readings:

Lecture #21: 13th April 2020

- Kolbert, Elizabeth. 2017. “Why Facts Don’t Change Our Minds,” *New Yorker*, February 27, 2017. <http://www.newyorker.com/magazine/2017/02/27/why-facts-dont-change-our-minds>
- Shane, Scott. 2017. “From Headline to Photograph, a Fake News Masterpiece,” *New York Times*, January 19, 2017. <https://www.nytimes.com/2017/01/18/us/fake-news-hillary-clinton-cameron-harris.html>
- Isaac, Mike. 2017. “At Facebook, Hand-Wringing Over a Fix to Fake Content,” *New York Times*, October 27, 2017: <https://www.nytimes.com/2017/10/27/technology/facebook-fake-content-employees.html>
- Taub, Amanda, and Max Fisher. 2018. “Where Countries are Tinderboxes and Facebook is a Match.” *New York Times*, April 21, 2018. <https://www.nytimes.com/2018/04/21/world/asia/facebook-sri-lanka-riots.html>
- Zuckerberg, Mark. 2019. “Mark Zuckerberg: The Internet Needs New Rules. Let’s Start in These Four Areas.” *The Washington Post*, March 30, 2019. https://www.washingtonpost.com/opinions/mark-zuckerberg-the-internet-needs-new-rules-lets-start-in-these-four-areas/2019/03/29/9e6f0504-521a-11e9-a3f7-78b7525a8d5f_story.html.
- Newton, Casey. 2019. “The Trauma Floor: The Secret Lives of Facebook Moderators.” *The Verge*, February 25, 2019. <https://www.theverge.com/2019/2/25/18229714/cognizant-facebook-content-moderator-interviews-trauma-working-conditions-arizona>
- Facebook. 2019. “Facing Facts” (Facebook’s response to misinformation). <https://newsroom.fb.com/news/2018/05/inside-feed-facing-facts/>
- Chen, Adrian. 2017. “Field of Vision - The Moderators.” *YouTube*, April 14, 2017. <https://www.youtube.com/watch?v=k9m0axUDpro> (note: this video follows the training of content moderators in India; after 10 minute mark includes references and images that some may find disturbing; students should feel free to stop the film at this point)
- Santa Clara Principles. 2018. “Santa Clara Principles on Transparency and Accountability in Content Moderation.” *santaclaraprinciples.org*. 2018. <https://santaclaraprinciples.org/>.
- Cadwalladr, Carole. 2019. “Facebook’s Role in Brexit — and the Threat to Democracy.” *TED Talks*. 2019. https://www.ted.com/talks/carole_cadwalladr_facebook_s_role_in_brexit_and_the_threat_to_democracy.

Group Exercise during Lecture:

Option #1: Constitutionally Protected Speech

Think-Group-Share exercise: Facebook post: “I encourage all patriotic Americans to take up arms and overthrow this godless (left/right)-wing government.”

Is this constitutionally protected speech (yes/no), and why?

Option #2: A Facebook Supreme Court

Mark Zuckerberg believes that Facebook might one day need an analog to the Supreme Court for adjudicating important decisions about content moderation. One of the core ideas is to be able to better adapt decisions to local norms and laws about speech, which vary widely around the world. When asked about more details about how this Facebook Supreme Court might work, he has said it would likely be asked to choose high-profile or important cases, in the manner of appeals courts in the United States. He also suggested they would likely publish their decisions, creating a kind of case law around Facebook policies.

Group exercise: Imagine that your group are the judges of a Facebook Supreme Court. You have been assigned the work of choosing these high-profile or important cases and adjudicate them.

Consider the following case:

“An image of two men kissing is posted to Facebook: a still from the British TV show *EastEnders*, the characters are embracing, eyes closed, a kiss on the lips. The author of the Facebook post said he chose the image because he thought it was a fairly uncontroversial one: “The photos I had considered using before I chose that one are much more racy. Oh the irony!” Soon afterward, several Facebook users flagged the image for being graphic sexual content, and it was removed. So began a public controversy in which Facebook was accused of hypocrisy and homophobia, with critics noting that gay kisses were being flagged and removed while straight kisses went unremarked” (Crawford and Gillespie 2014, 410–11).

- Would you consider an appeal made on this case to your Facebook Supreme Court? What criteria will you as a group use to take up this case and what might be a good reason for rejecting it?
- In case, you choose to take up this case, how would you adjudicate this case? If you choose to reject this appeal, how would you justify Facebook’s action in removing the image?

The appeal also raises a problem with Facebook’s content moderation practices by complaining that the current state of user-generated flagging is not an appropriate technique to involve user feedback in content moderation. It should be supplemented by a more Wikipedia-like model, where “the quality of content is openly debated and the decisions to keep or remove content on that basis are visible and preserved over time. [...] This might involve a space for “backstage” discussion, one that preserved the history of debates about a particular video, image, or post. This would provide a space for engaged debate where objections and counterobjections could be made, rather than the current process, which is inscrutable to other users” (Crawford and Gillespie 2014, 421–22).

- For groups that decided to hear the appeal, how would you respond to this problem?
- For groups that decided not to hear the appeal, would you reconsider your decision in light of this problem mentioned in the appeal? Why? What is your response to this problem?

Recommended Readings:

- Electronic Frontier Foundation, and Visualizing Impact. n.d. “Online Censorship.” *onlinecensorship.org*. <https://onlinecensorship.org/>.
- Vox. 2018. “The Cambridge Analytica Scandal.” Vox Media. 2018. <https://www.vox.com/2018/4/10/17207394/cambridge-analytica-facebook-zuckerberg-trump-privacy-scandal>.
- Allcott, Hunt, and Matthew Gentzkow. 2017. “Social Media and Fake News in the 2016 Election.” Working Paper 23089. Cambridge, MA. <https://www.nber.org/papers/w23089>.
- Article 19. 2018. “Self-Regulation and ‘Hate Speech’ on Social Media Platforms.” London. https://www.article19.org/wp-content/uploads/2018/03/Self-regulation-and-‘hate-speech’-on-social-media-platforms_March2018.pdf.
- Crawford, Kate, and Tarleton L. Gillespie. 2014. “What Is a Flag for? Social Media Reporting Tools and the Vocabulary of Complaint.” *New Media & Society* 18 (3): 410–28. <https://doi.org/10.1177/1461444814543163>.
- Gillespie, Tarleton L. 2012. “The Dirty Job of Keeping Facebook Clean.” *Culture Digitally*. 2012. <http://culturedigitally.org/2012/02/the-dirty-job-of-keeping-facebook-clean/>.
- Facebook, “Community Standards”: <https://www.facebook.com/communitystandards>
- Twitter, “The Twitter Rules”: <https://help.twitter.com/en/rules-and-policies/twitter-rules>

Theme #5(a) | Privacy, Security, and Freedom of Information: Privacy and Surveillance (15-20 April 2020)

Apart from granting rights of free speech and association, the First Amendment also guarantees a protected space for experimentation, growth, and learning to develop ideas before communicating them, that is, a right to privacy of beliefs. After all, you will only be able to exercise your voice effectively when you have privacy to develop it. Furthermore, the First Amendment grants the right to peacefully assemble as a group in private. However, these rights don't tackle the issue of privacy comprehensively. While the American Constitution does not declare a right to privacy as such, the American courts and legislature have recognized an implied right of privacy. Moving onto the fifth theme, we tackle the thorny problem of understanding the scope and features of the right to privacy, which is defined and approached in a variety of ways in different arenas of American law and policy:

The meaning of the term *privacy* changes according to its legal context. In constitutional law, privacy means the right to make certain fundamental decisions concerning deeply personal matters free from government coercion, intimidation, or regulation. In this sense, privacy is associated with interests in autonomy, dignity, and self-determination. Under the common law, privacy generally means the right to be let alone. In this sense, privacy is associated with seclusion. Under statutory law, privacy often means the right to prevent the nonconsensual disclosure of sensitive, confidential, or discrediting information. In this sense, privacy is associated with secrecy (Lehman and Phelps 2005, 105–6, emphasis in original).

While right to privacy has several meanings, it has a deep and concomitant relationship with surveillance practices, whether it is collection of personally identifiable information by IT companies or collection of metadata and content of communications by intelligence agencies for national security.

There is a tension between the safety of the individual as granted by his or her privacy, and the safety of the community [or the efficient delivery of data-driven services] which comes from denying the individual [or data subject] his or her privacy. On the most basic level, I feel safest if you know nothing about me but I know everything about you. This is reversed from your perspective, leading to the tension of balancing privacy against security. This balance suggests that it may be morally justifiable to deny one person's privacy in the interests of the security of the community [or the efficient delivery of data-driven services], although it is by no means always clear when these situations might arise (Macnish, n.d.).

Key questions:

- Is privacy just a (bad) word for a bundle of other and more concrete rights? (liberty, property, rights against injury, etc.). And if so, do we need a privacy right at all?
- How do we balance between maintaining privacy of users and using their data to offer government or private services?
 - Are privacy/freedom inevitably at odds with efficient delivery of data-driven services?
 - What are (or should be) the rights and responsibilities of: a) communication and IT firms, and b) individual data subjects vis-à-vis data controllers and processors?
 - Is transparency/disclosure an adequate response to data protection?
- How do governments balance between the safety of citizens as granted by their privacy and the safety of the community which may come from denying the individual citizen their privacy?

- Are privacy/freedom inevitably at odds with national security?
- What are (or should be) the rights and responsibilities of: a) communication and IT firms, and b) individual citizens vis-à-vis federal investigation and surveillance efforts?
- Is transparency/disclosure an adequate response to collection efforts?
- In its framing as an individual-level right, does privacy miss important dimensions of collective concern (e.g. the group-level or cumulative effects of citizen or consumer surveillance)?

Key terms:

Privacy; Transparency and Choice; Right to be let alone; Right of self-disclosure; Privacy Torts; Fair information practices; Notice/awareness; Access; Consent; Participation; Downstream consent; Enforcement and redress; Privacy Act of 1974; Collection limitation principle; Data quality principle; Purpose specification principle; Use limitation principle; Security safeguard principle; Openness principle; Individual participation principle; Accountability principle; General Data Protection Regulation (GDPR); Data subject; Data controller; Data processor; Right to be forgotten; Right not to be subject to a decision based solely on automated processing; Unreasonable searches and seizures; Probable cause; Exclusionary rule; Principle of minimalism; *Olmstead v. United States* (1928); *Katz v. United States* (1967); Reasonable expectation of privacy standard; *Kyllo v. United States* (2001); *Jones v. United States* (2012); Third party doctrine; *Carpenter v. United States* (2018); Church Committee Report (1976); Electronic Communications Privacy Act of 1986; Foreign Intelligence Surveillance Act (FISA) of 1978; Foreign Intelligence Surveillance Court (FISC); Targeting; Minimization procedures; Necessity of surveillance; Social Sorting; Function Creep; Chilling effects.

Required Readings:

Lecture #22: 15th April 2020

- Macnish, Kevin. n.d. “Surveillance Ethics.” *Internet Encyclopedia of Philosophy*.
<https://www.iep.utm.edu/surv-eth/>
- Lehman, Jeffrey, and Shirelle Phelps, eds. 2005. “Privacy” and “Privacy Act of 1974.” In *West’s Encyclopedia of American Law, Volume 8*, 2nd ed., 97–108. Detroit and London: Thomson Gale.
- Larkin Jr., Paul J. 2013. “The Fourth Amendment and New Technologies.” Washington, DC.
<https://www.heritage.org/report/the-fourth-amendment-and-new-technologies>.

Section #12: 17th April 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Lecture #23: 20th April 2020

- Litt, Robert S. 2013. “Privacy, Technology and National Security: An Overview of Intelligence Collection.” Office of the Director of National Intelligence. 2013.
<https://www.dni.gov/index.php/newsroom/speeches-interviews/speeches-interviews-2013/item/896-privacy-technology-and-national-security-an-overview-of-intelligence-collection-by-robert-s-litt-odni-general-counsel>.
- Edward Snowden, “Here’s How We Take Back the Internet.” TED Talks. 2014.
https://www.ted.com/talks/edward_snowden_here_s_how_we_take_back_the_internet.

- Richard Ledgett, “The NSA Responds to Edward Snowden’s TED Talk.” TED Talks. 2014. https://www.ted.com/talks/richard_ledgett_the_nsa_responds_to_edward_snowden_s_ted_talk.

Group Exercises (either in lectures or sections):

Option #1: Exploring the “reasonable expectation” standard (beyond law enforcement)

Begin the first lecture on this theme by taking responses of students on the following yes/no clicker questions?

- Do we have a reasonable expectation of privacy in email (gmail vs. employer or university-based accounts)? (Yes/No)
 - Does it matter if it’s encrypted, or stored and accessed through password-protected accounts? (Yes/No)
- Do we have a reasonable expectation of privacy in (private) Facebook postings? (Yes/No)
- Do we have a reasonable expectation of privacy in mobile phone conversations? (Yes/No)
 - Does it matter if they’re conducted in public places (e.g., Collegetown Bagels)? (Yes/No)
- Do we have a reasonable expectation of privacy in browsing history? (if conducted on a privately-owned computer through commercial ISP? (Yes/No)
 - If on a university or employer-owned computer through employer networks?) (Yes/No)

Repeat the exercise with the same questions around the end of the second lecture. *Compare the difference in frequency of yeses and nos.*

Option #2: Privacy in a Purse/Wallet

Think-Group-Share exercise: Think of the contents of your purse or wallet. Differentiate and make a table about the content of your wallet in terms of what you consider to be public in one column and what you consider to be private in another. Use as many rows as you like.

You are expected to think independently about your answer and your own table. After three minute or so, you will start a discussion in your group. Compare your table with others in your group. Identify content that you considered private and your peers considered public and vice versa. We will go around the class and ask groups at random to share their difficulties in appropriately categorizing content of wallets as public/private.

Option #3: Surveillance cameras at entrance to Cornell dorms?

Consider the following proposal:

Per policy on Responsible Use of Video Surveillance Systems, Cornell University allows the use of approved video surveillance systems through a transparent process, subject to rules governing equipment installation and employment, and use of the resulting recorded material. In order to deal with issues of theft and/or assault by unauthorized entrants, Cornell is currently exploring the introduction of surveillance cameras at all external entrances to West Campus dorms.

Think-Group-Share exercise: Keeping fair information practices discussed today in mind, think of your answer and then your mutually agreed upon group answer for the following questions about this proposal:

- Is this a good thing or bad thing (and why)?

- If some such system were to be implemented, are there maximally privacy-preserving design choices that could be adopted?

Recommended Readings:

- Warren, Samuel D., and Louis D. Brandeis. 2005. "The Right to Privacy." In *Information Ethics: Privacy, Property, and Power*, edited by Adam Daniel Moore, 209–25. Seattle: University of Washington Press.
- Fogel, Jeremy. 2014. "A Reasonable Expectation of Privacy." *Litigation* 40 (4): 6–11.
- Bankston, Kevin S., and Ashkan Soltani. 2014. "Tiny Constables and the Cost of Surveillance: Making Cents Out of *United States v. Jones*." *The Yale Law Journal* 123.
<https://www.yalelawjournal.org/forum/tiny-constables-and-the-cost-of-surveillance-making-cents-out-of-united-states-v-jones>.
- Lyon, David. 2003. "Surveillance as Social Sorting: Computer Codes and Mobile Bodies." In *Surveillance as Social Sorting: Privacy, Risk, and Digital Discrimination*, edited by David Lyon, 13–30. London and New York: Routledge.
- Facebook, "Data Policy": <https://www.facebook.com/policy.php>
- Twitter, "Twitter Privacy Policy": <https://twitter.com/en/privacy>
- Google, "Privacy & Terms": <https://policies.google.com/privacy?hl=en-US>

Theme #5(b) | Privacy, Security, and Freedom of Information: Online Privacy and Big Data (April 22-24, 2020)

Moving on the diverse meanings of privacy as a legal and ethical concept to its specific implications for privacy of user information in a digital world, we will explore how questions of privacy have evolved with changes in capabilities to process information:

Evolution of the concept of Information Privacy with the evolution of Information Technology (adapted from Smith, Dinev, and Xu 2011, 991)	
Period	Characteristics
Privacy Baseline 1945-1960	Limited information technology developments, high public trust in government and business sector, and general comfort with the information collection.
First era of contemporary privacy development 1961-1979	Rise of information privacy as an explicit social, political, and legal issue. Early recognition of Contemporary Privacy potential dark sides of the new technologies, formulation of the Fair Information Development Practices (FIP) Framework and establishing government regulatory mechanisms established 1961 -1979 such as the Privacy Act of 1974.
Second era of privacy development 1980-1989	Rise of computer and network systems, database capabilities, federal legislation designed to channel the new technologies into FIP, including the Computer Matching and Privacy Protection Act of 1988. European nations move to national data protection laws for both the private and public sectors.
Third era of privacy development 1990-present	Rise of the Internet, Web 2.0 and the terrorist attack of 9/11/2001 dramatically changed the landscape of information exchange. Reported privacy concerns rose to new highs.

It is important to note here that this table was first published in 2011 and *we would argue that the rapid proliferation of big data analytics in providing public/private services to citizens/customers could very well be the Fourth era of privacy development.* With companies like IBM, Facebook, and Google developing their own proprietary machine learning techniques in Watson, DeepFace, and Sibyl respectively in the 2010s, information privacy has taken on new meanings and concerns. However, this does not mean that the questions around information privacy should necessarily change:

Questions about protecting privacy online, particularly when framed as questions about *online privacy*, suggest that ‘online’ is a distinctive venue, sphere, place, or space defined by the technological infrastructures and protocols of the Net, for which a single set of privacy rules can, or ought to, be crafted. I resist this notion. However exhilarating the vision of cyberspace as a new frontier, experience reveals no insulated domain divorced from ‘real life’ and deserving distinctive regulation. The Net does not constitute (drawing on the terminology of contextual integrity) a discrete context. It is not a single social realm, but the totality of experience conducted via the Net, from specific websites to search engines to platforms and on up into ‘the

cloud,' crisscrossing multiple realms. Activities online, mediated by the Net ('on' the Web), are deeply integrated into social life: they may be continuous with brick-and-mortar correlates or, at the very least, have the power to affect communications, transactions, interactions, and activities in those realms (and vice versa). Not only is life online integrated into social life, and hence not productively conceived as a discrete context, it is *radically heterogeneous*, comprising multiple social contexts, not just one, and certainly is not just a commercial context where protecting privacy amounts to protecting *consumer* privacy and commercial information. To be sure, the contours of technology (architecture, protocol, design, and so on) shape what you can do, say, see, and hear online, but while alterations, or disruptions due to particular characteristics of the Net, impose puzzles and pose challenges for social contexts, they do not warrant *sui generis*, uniform, cross-cutting rules determined by the medium. Instead, the contexts in which activities are grounded shape expectations that, when unmet, cause anxiety, fright, and resistance (Nissenbaum 2011, 38, emphasis in original).

Key questions:

- Does privacy overvalue individual vs. public or collective interests? Can privacy (as 'the right to be let alone') undermine the efficiency or effectiveness of data-driven services by limiting or obscuring relevant information?
- Can privacy protect actions/conduct that should be exposed to broader scrutiny? For example, early interpretations of domestic abuse as a 'private' matter; presumptive privacy of internal corporate accounting and subsequent abuses (e.g. Enron and Sarbanes-Oxley Act); Facebook invoking user privacy as a rationale for not permitting access to their data. Are defenses of privacy sometimes defenses of privilege?
- How to regulate data extraction and patterns emerging out of user data? What is an acceptable degree of granularity of data used in recognizing patterns for service delivery? How to achieve data parity without sacrificing personal or collective privacy?

Key terms:

Contextual integrity; Data collection; Data storage; Data transmission; Minimization; Transparency and Choice; End-user license agreement (EULA); Contracts of adhesion; Notice and Consent; Defaults; Participation; Data extraction; Data correction; Data obfuscation; Data anonymization; Data pseudonymization; Pattern Recognition; Data Parity; Computer Matching and Privacy Protection Act of 1988; Shibley v. Time (1975); Dwyer v. American Express (1995); Remsburg v. Docusearch (2003); United States v. Facebook (2011); United States v. Google (2012); Unfair and deceptive trade practices.

Required Readings:

Lecture #24: 22nd April 2020

- Nissenbaum, Helen. 2011. "A Contextual Approach to Privacy Online." *Daedalus* 4 (Fall): 32–48. <https://www.amacad.org/publication/contextual-approach-privacy-online>.
- Duhigg, Charles. 2012. "How Companies Learn Your Secrets." *New York Times Magazine*, February 2012. <https://www.nytimes.com/2012/02/19/magazine/shopping-habits.html>
- O'Mara, Margaret. 2018. "The End of Privacy Began in the 1960s." *New York Times*, December 5, 2018. <https://www.nytimes.com/2018/12/05/opinion/google-facebook-privacy.html>.

- Barocas, Solon, and Helen Nissenbaum. 2014. “Big Data’s End Run Around Procedural Privacy Protections.” *Communications of the ACM* 57 (11): 31–33. <https://doi.org/10.1145/2668897>.
- Calo, Ryan. 2017. “Artificial Intelligence Policy: A Primer and Roadmap.” *UC Davis Law Review* 51 (2): 399–436. https://lawreview.law.ucdavis.edu/issues/51/2/Symposium/51-2_Calo.pdf [Read only the section on ‘Privacy and Power’, 420-25]
- Fowler, Geoffrey A. 2018. “Hands off My Data! 15 Default Privacy Settings You Should Change Right Now.” *The Washington Post*, June 1, 2018. <https://www.washingtonpost.com/news/the-switch/wp/2018/06/01/hands-off-my-data-15-default-privacy-settings-you-should-change-right-now/>.

Section #13: 24th April 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Group Exercises (either in lectures or sections):

Option #1: Cornell Health Guide for Parents

Cornell’s confidentiality policy regarding disclosure of student’s health information to their parents is as follows:

The care we provide to your student is confidential, in accordance with state and federal law and professional standards. While there are no restrictions on you sharing information with us, in non-life threatening situations, we must have your student’s permission to disclose information to you or other family members. Your student will be asked to sign an Authorization for the Release of Health Records prior to the release of any information (even about medical bills). Authorizations can only be completed for health services that have already been rendered; your student cannot grant pre-authorizations or “blanket authorizations” unless they have a chronic medical problem that requires extended treatment. To learn more about this policy, please contact Cornell Health’s Privacy Officer at 607-255-7896.

Think-Group-Share exercise: Think of your answer and then your mutually agreed upon group answer for the following questions about this policy:

- Is this a good thing or bad thing?
- Situations/contexts this situation is meant to protect against?
- Situations in which this policy should be relaxed or ignored?

Option #2: The Privacy Paradox

In this deep dive, in addition to doing the readings, please complete the Privacy Paradox five-day challenge from WNYC Studios’ Note to Self podcast. Each day consists of a short audio podcast and an online activity. See <https://project.wnyc.org/privacy-paradox/>

Option #3: Tinkering with privacy settings of a service you use

- Read one privacy policy of a service you use!
- Check/switch your defaults! (per Fowler piece)
- Think about (and practice?) obfuscation!
- Select for privacy! (give privacy-preserving actors a win in the market)

Recommended Readings:

- Brunton, Finn, and Helen Nissenbaum. 2011. “Vernacular Resistance to Data Collection and Analysis: A Political Theory.” *First Monday* 16 (5). <https://firstmonday.org/article/view/3493/2955>.
- H Jeff Smith, Tamara Dinev, and Heng Xu. 2011. “Information Privacy Research: An Interdisciplinary Review.” *MIS Quarterly* 35 (4): 989–1015. <https://doi.org/10.2307/41409970>
- Federal Trade Commission. 2012. “Protecting Consumer Privacy in an Era of Rapid Change: Recommendations for Businesses and Policymakers.” Washington DC. <https://www.ftc.gov/reports/protecting-consumer-privacy-era-rapid-change-recommendations-businesses-policymakers>.

Theme #6 | AI Ethics: Decision-Making Machines (27-29 April 2020)

As the concluding theme of this course, we turn towards the future and extrapolate the direction of research in information ethics, law, and policy. We had a short introduction to questions of AI ethics in the context of online privacy last week, however, AI ethics encompasses a diversity of social issues that go beyond questions of protecting privacy. Balkin elaborates on the scope of AI concerns by arguing that we live in an Algorithmic Society. The challenges of managing AI and Big data are features of living in it. At the same time, he also suggests that the subject of regulation has not changed dramatically:

The conceit of the Algorithmic Society is the harnessing of data and algorithms to govern and improve society. The ambition of the Algorithmic Society is omniscience—to know all and to predict all—an ambition as old as humanity itself, but now seemingly ever closer to being within our grasp.

In the Algorithmic Society, the central problem of regulation is not the algorithms, but the human beings who use them, and who allow themselves to be governed by them. Algorithmic governance is the governance of humans by humans using a particular technology of analysis and decision-making (Balkin 2017, 1221).

When algorithms discriminate or do bad things, therefore, we always need to ask how the algorithms are engaged in reproducing and giving effect to particular social relations between human beings. These are social relations that produce and reproduce justice and injustice, power and powerlessness, superior status and subordination (Balkin 2017, 1223)

We will map a range of emergent ethical and proto-legal questions that these societal changes amplified by AI and Big data analytics raise:

Consider a prosaic-seeming social change: machines are already being given the power to make life-altering, everyday decisions about people. Artificial intelligence can aggregate and assess vast quantities of data that are sometimes beyond human capacity to analyze unaided, thereby enabling AI to make hiring recommendations, determine in seconds the creditworthiness of loan applicants, and predict the chances that criminals will re-offend.

But such applications raise troubling ethical issues because AI systems can reinforce what they have learned from real-world data, even amplifying familiar risks, such as racial or gender bias. Systems can also make errors of judgment when confronted with unfamiliar scenarios. And because many such systems are “black boxes,” the reasons for their decisions are not easily accessed or understood by humans—and therefore difficult to question, or probe (Shaw 2019).

Key questions:

- What should be the responsibilities and liabilities of firms and other organizations possessing or processing large amounts of (personally identifiable) consumer data? What rights of redress should consumers have if/when these firms abuse, exploit, or fail to protect that data?
- How do we balance between maintaining autonomy and opportunities for humans in a world which increasingly relies on the work of machines for productivity, efficiency, and decision-making? What kind of decisions can be left to be made by machines and when do we need humans in the loop?

Key terms:

Algorithmic Society; Big data; Frankenstein complex; Homunculus fallacy; Asimov's laws of Robotics; Three laws of algorithmic society; Information fiduciaries; Duty of care; Duty of loyalty; Duty towards general public; Algorithmic nuisance; Predictive policing; Disparate treatment; Disparate impact; Discriminatory bias; Redlining; Data breaches; Fairness, Accountability and Transparency (FAT); Procedural privacy; De-identification; Re-identification; Repurposing; Downstream use; Digital traces; Digital identity.

Required Readings:

Lecture #25: 27th April 2020

- Isaac Asimov, 1950. "Runaround." In *I, Robot*. New York: Doubleday.
https://web.williams.edu/Mathematics/sjmillier/public_html/105Sp10/handouts/Runaround.html
- Jack M. Balkin, 2017. "The Three Laws of Robotics in the Age of Big Data." *Faculty Scholarship Series* 5159. https://digitalcommons.law.yale.edu/fss_papers/5159.

Lecture #26: 29th April 2020

- Kassner, Michael. 2017. "5 Ethics Principles Big Data Analysts Must Follow." *TechRepublic*. 2017. <https://www.techrepublic.com/article/5-ethics-principles-big-data-analysts-must-follow/>.
- Nijhuis, Michelle. 2017. "How to Call B.S. on Big Data: A Practical Guide." *The New Yorker*, June 2017. <https://www.newyorker.com/tech/annals-of-technology/how-to-call-bullshit-on-big-data-a-practical-guide>.
- Shaw, Jonathan. 2019. "Artificial Intelligence and Ethics: Ethics and the Dawn of Decision-Making Machines." *Harvard Magazine*, 2019. <https://harvardmagazine.com/2019/01/artificial-intelligence-limitations>.
- Christakis, Nicholas A. 2019. "How AI Will Rewire Us." *The Atlantic*, April 2019. <https://www.theatlantic.com/magazine/archive/2019/04/robots-human-relationships/583204/>.

Group Exercises during lectures:

Option #1: AI Ethics case studies

Prior to coming to lecture, the group will divide the following three case studies accessible at <https://aiethics.princeton.edu/case-studies/case-study-pdfs/> between members:

1. Case Study 3: Optimizing Schools
2. Case Study 5: Hiring by Machine
3. Case Study 6: Public Sector Data Analytics

Each member of the group will only read one case study.

During the lecture, groups will discuss all case studies with the following questions in mind:

- What are the similarities between the case studies? How do questions from case study apply to others?
- What are the differences between the case studies? What role does context and consequences have to play in understanding these differences?

We will then randomly call upon groups to populate a table on similarities and differences and discuss whether the whole class agrees on them.

Option #2: The Facebook/Cornell contagion study

Consider the collaboration between Cornell and Facebook on a secret mood manipulation experiment:

- For one week in January 2012, data scientists skewed what almost 700,000 Facebook users saw when they logged into its service. Some people were shown content with a preponderance of happy and positive words; some were shown content analyzed as sadder than average. And when the week was over, these manipulated users were more likely to post either positive or negative words themselves.
- This study is different from previous studies because, while other studies have observed Facebook user data, this one set out to manipulate it.
- The experiment is almost certainly legal. In the company's current terms of service, Facebook users relinquish the use of their data for "data analysis, testing, [and] research."
- Researchers found significant (but very weak) positive correlation between their manipulation and the responses of manipulated users a week later.

Think-Group-Share exercise: Think and discuss your answers to the following questions:

- Is this experiment ethical? Did the researchers do anything wrong? Did Facebook do anything wrong?
- Who is morally accountable for any harms caused by the study? How should responsibility for preventing unethical data conduct be distributed within Facebook, and why might that be a challenge to figure out?
- What three things would you change to make this study more okay? Decide on three principles or rules that academic researchers should follow while conducting big data research.
- Extending this research further, what about *non-academic* big data researchers? What are the rules/principles *commercial* analysts should follow in conducting big data research? Are they different from the principles you identified for academic researchers? How and why?

Option #3: Revisiting Self-Driving Cars as Moral Machines

Beyond the "runaway trolley problem", autonomous vehicles provide a pertinent case study to think about complexities of policy and regulation in the future:

Once a car is truly autonomous, Zittrain explains, "It means that if an arrest warrant is issued for someone, the next time they enter an autonomous vehicle, the doors could lock and the car could just drive them to the nearest police station. Or what if someone in the car declares an emergency? Can the car propel them at 70 miles per hour on city streets to the hospital, while all the other cars part like the Red Sea?" [...]

The situation becomes more complex if the vehicle's AI system dynamically changes its behavior as it "learns" from experiences on the road, Zittrain points out. "Maybe if it drives enough in Boston, it will become a Boston driver!" This applies to many learning systems, and the legal solutions remain unexplored. (Shaw 2019)

Think-Group-Share exercise: Should the driver be able to instruct the car to break the speed limit and go 100 miles per hour?

- Clicker question: Yes/No
- Group question: Build consensus within your group on the previous yes/no question and note down reasons for choosing your answer.
- How would you assign accountability when an autonomous vehicle is caught speeding?

Recommended Readings:

- White House OSTP. 2016. "Preparing for the Future of Artificial Intelligence." https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/preparing_for_the_future_of_ai.pdf.
- boyd, danah, and Kate Crawford. 2012. "Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon." *Information, Communication & Society* 15 (5): 662–79. <https://doi.org/10.1080/1369118X.2012.678878>.
- Pichai, Sundar. 2018. "AI at Google: Our Principles." *The Keyword*. 2018. <https://blog.google/technology/ai/ai-principles/>.
- Zwitter, Andrej. 2014. "Big Data Ethics." *Big Data & Society* 1 (2): 1-6. <https://doi.org/10.1177/2053951714559253>.
- Russell, Stuart. 2016. "Q&A: The Future of Artificial Intelligence." University of Berkeley. <http://people.eecs.berkeley.edu/~russell/temp/q-and-a.html>.
- Zhang, Sarah. 2016. "Scientists Are Just as Confused About the Ethics of Big Data Research As You Are." *Wired*, May 2016. <https://www.wired.com/2016/05/scientists-just-confused-ethics-big-data-research/>.
- Helbing, Dirk, Bruno S. Frey, Gerd Gigerenzer, Ernst Hafen, Michael Hagner, Yvonne Hofstetter, Jeroen van den Hoven, Roberto V. Zicari, and Andrej Zwitter. 2017. "Will Democracy Survive Big Data and Artificial Intelligence?" *Scientific American*, February 2017. <https://www.scientificamerican.com/article/will-democracy-survive-big-data-and-artificial-intelligence/>.

Wrap-up and Review (May 1-4, 2020)

In the last lecture of this course, we will revisit key questions and terms that we have discussed throughout the semester. As we had mentioned in the very beginning of this course, if you were to take away one insight from this course, it should be:

*Questions of information ethics, law, and policy, like any other domain of governance, are primarily questions of **balancing** between competing interests, and between rights and obligations of multiple stakeholders in the landscape of digital economy. To be able to maintain this balance, an understanding of the history of law and policy in specific sectors and aspects of IT industry (addressed as ‘themes’ in the outline of this course) is required to come up with solutions to contemporary problems they face and anticipate the trajectory of their future(s).*

Specifically, we have discussed the following themes during the span of this semester:

1. *Computing Ethics*
(diversity, inequality, inclusion, labor, consumption, waste, and the social and material challenges of the digital economy)
2. *Intellectual Property*
(patents, copyrights, and balancing between different uses of Intellectual Property)
3. *Telecommunications and Network Policy*
(AT&T as a regulated monopoly, net neutrality, spectrum allocation, and balancing access to infrastructural resources for communication services)
4. *Competition, Antitrust, and Freedom of Expression*
(emerging monopolies in the IT industry, regulating speech, antitrust, and balancing the interests of platform providers and users)
5. *Privacy, Security, and Freedom of Information*
(surveillance, contextual privacy, and balancing access to user information)
6. *AI Ethics*
(emerging challenges in AI policy, big data analytics, and balancing between humans and machines)

We hope that after taking this course, you have a deeper understanding of these themes and their implications when compared to the first time you read them in the beginning of this course. In coming up with policy responses to the issues that the IT industry is facing or will face in the future, remember that policy can be proactive, anticipatory, and lead change or it can be reactive, obstructive, trailing agents of change necessarily located elsewhere (in technology, economy, culture, etc.). It depends on how the balancing act of policymaking is achieved through anticipation or in response to a variety of factors such as speed of innovation, convergence, and legacies that make ideal policies so hard to achieve. Dealing with questions of ethics, law, and policy is hard work, but it is not impossible! And we hope that we have given you a good sense of what this work looks like.

When in doubt, as information ethicists and policy and law makers of the future, our concluding recommendation is to start with Norbert Wiener’s method for analyzing information ethics issues (borrowed from the initial readings for this course):

1. “Identify an ethical question or case regarding the integration of information technology into society. Typically this will focus upon technology-generated possibilities that could significantly affect (or are already affecting) life, health, security, happiness, freedom, knowledge, opportunities, or other key human values.
2. Clarify any ambiguous or vague ideas or principles that may apply to the case or issue in question.
3. If possible, apply already existing, ethically acceptable principles, laws, rules, and practices (the ‘received policy cluster’) that govern human behavior in the given society.
4. If ethically acceptable precedents, traditions, and policies are insufficient to settle the question or deal with the case, use the purpose of a human life plus the great principles of justice to find a solution that fits as well as possible into the ethical traditions of the given society” (Wiener’s method summarized by Bynum 2008, 30).

Required Readings:

Section #14: 1st May 2020

- No assigned readings. More instructions will be provided by your Section TAs.

Lecture #27: 4th May 2020

- No assigned readings.

Required Activity: Complete the course feedback survey during the lecture.

Group Exercises (either in lectures or sections):

Option #1: Clicker exercise: Exploring difficult key terms

The lecture will be organized around voting for the most difficult key terms of the course. Taking course themes one at a time, students will be asked to vote for terms they found to be the most difficult. Based on the votes, we will take the top two most-voted terms from each theme and review in total twelve major key terms of the course.

Recommended Readings:

- Bynum, Terrell Ward. 2008. “Milestones in the History of Information and Computer Ethics.” In *The Handbook of Information and Computer Ethics*, edited by Kenneth Einar Himma and Herman T. Tavani, 25–48. New Jersey: Wiley.

ASSIGNMENT PROMPT

Policy Memo #1: Promoting HR Diversity or Sustainability Practices

Write a 3-4 page (single-spaced, 12-pt font (reference list not included in page limit)) paper outlining the key issues, varying positions, specific policy proposals, and principal stakeholders in promoting diversity in human resources or sustainability practices in an information technology company of your choice.

Following the format and standards of the “How To Write a Policy Memo” document shared in the syllabus, and drawing on arguments from scholarly sources, public interest groups, media reports, and the companies themselves, write a policy memo addressed to the leadership of a company of your choice that: *a) describes (with reference to evidence and sources) three most important diversity or sustainability problems facing the company today; b) reviews and assesses actions or policies taken (or promised) by the company in question to date; and c) provides clear recommendations for other or further actions in response to the problems identified (or conversely, argue why existing or additional actions may be unnecessary or inappropriate).*

Your paper should provide key background on the issues in question, existing problems or controversies, and show familiarity with what the companies have said and done in response to these issues to date. Where important counter-arguments or limitations to your recommendations exist, these should be noted (and balanced or resolved in your final recommendations). Please note too that your analysis and recommendations should **focus primarily on questions of diversity or sustainability, not both or other policy issues** that may also be present at the company in question (privacy, antitrust, etc.). Your memo may draw on arguments from public interest groups, industry associations, government and court documents, media analyses and scholarly sources, and should include a minimum of 8-10 references (assigned class readings can count towards this but should not be your only sources).

Your memo is due by 1:25 PM on **Monday, 2nd March 2020**.

ASSIGNMENT PROMPT

Policy Memo #2: Debate over bringing an antitrust case against Amazon or Google or Apple

Write a 3-4 page (single-spaced, 12-pt font (reference list not included in page limit)) paper outlining the key issues, varying positions, specific policy proposals, and principal stakeholders in the current debate over bringing an antitrust case against Amazon/Google/Apple to the Federal Trade Commission. Please **focus on one of the three companies** when writing your memo.

*Your memo should follow the format of the “How to Write a Policy Memo” document shared in the syllabus, and should clearly lay out key background for the debate along with **three** main arguments, proposals, and evidence offered on **both** sides of the debate (1 to 1.5 pages each), and then stake out your own position and recommendations.* When elaborating on arguments for or against bringing an antitrust case against Amazon/Google/Apple, remember to present these arguments without taking a position around which side is “right” and which side is “wrong”. This section of your paper is not about evaluating the arguments, but about exploring how both sides formulate them and try to make them persuasive. In the final section of your paper, you will have space to talk about your own position and recommendations for the debate.

Your memo may draw on arguments from public interest groups, industry associations, government and court documents, media analyses and scholarly sources, and should include a minimum of 8-10 references (assigned class readings can count towards this but should not be your only sources).

Your memo is due by 1:25 PM on **Monday, 6th April 2020**.

ASSIGNMENT PROMPT

Policy Memo #3: Rights of Data Subjects

Write a 3-4 page (single-spaced, 12-pt font (reference list not included in page limit)) paper outlining the key issues, varying positions, specific policy proposals, and principal stakeholders in promoting rights of users as data subjects of an information technology company of your choice or citizens as data subjects to a government organization of your choice.

Following the format and standards of the “How To Write a Policy Memo” document shared in the syllabus, and drawing on arguments from scholarly sources, public interest groups, media reports, and the companies themselves, write a policy memo addressed to the leadership of a company of your choice *that: a) describes (with reference to evidence and sources) **three** most important rights of users as data subjects of concern to the company or the government organization; b) reviews and assesses actions or policies taken (or promised) by the company or the government organization to protect these rights in question to date; and c) provides clear recommendations for other or further actions in response to the problems identified (or conversely, argue why existing or additional actions may be unnecessary or inappropriate).*

Your paper should provide key background on the rights in question, existing problems or controversies, and show familiarity with what the company or the government organization has said and done in response to these issues to date. Where important counter-arguments or limitations to your recommendations exist, these should be noted (and balanced or resolved in your final recommendations). Please note too that your analysis and recommendations should **focus primarily on questions of rights of users/citizens as data subjects, and not on other policy issues** that may also be present at the company/government organization in question (HR policies, sustainability initiatives, etc.). Your memo may draw on arguments from public interest groups, industry associations, government and court documents, media analyses and scholarly sources, and should include a minimum of 8-10 references (assigned class readings can count towards this but should not be your only sources).

Your memo is due by 1:25 PM on **Wednesday, 29th April 2020**.

APPENDIX #1: HOW TO WRITE A POLICY MEMO

(updated February 2019)

I. WHO READS MEMOS?

The typical recipient of a policy memo a) is extremely busy, b) is less knowledgeable about the subject at hand than the memo's author, and c) is responsible for making important decisions on the basis of memos like the one you are about to write. All the suggestions below should be considered in this light.

II. TITLING: Please use the following format:

To: ... [name of stakeholder you're addressing: for example, "Ajit Pai, Chair of the Federal Communications Commission"]

From: ... [your name]

Re: ... [a clear, simple and descriptive title: for example "Recommendations for Copyright Reform"]

Date: ... [date of memo submission]

Section: ... [give section # and TA name – for example, "203 (Palashi Vaghela)"]

II. INTRODUCTION FORMAT

Begin your memo with a short summary introduction. This introduction should tell the reader:

1. *The memo topic and what ground or issues it covers.*
2. *Key points, recommendations or conclusions that you will be arriving at in your analysis.*
3. *A roadmap or outline of the memo's structure. For example, "Section 1 reviews key background on current structure and past reform efforts in U.S. Copyright policy. Section 2 outlines three key limits and problems in current copyright policy: [identify these – 'A, B, and C']. Section 3 discusses key recommendations for action by the courts and Congress that could help address these challenges.*

Recall that in real-world settings people may never read more than the introduction or executive summary. Those who do will find it much easier to understand your memo after reading it. Policy memos are not mystery novels – it's okay to give away the ending!

III. WRITING

Your memo should be clear, concise, well structured and easy to follow. It should also be carefully proofread and written in a professional manner (no typos; clear grammar; no colloquialisms; etc.). Five guidelines for good formatting should be kept in mind.

1. Stay on point and keep it short. The typical memo should make a single point or a handful of related points. Drop any argument that does not support your main point/s. Concise memos earn wider readership and higher praise than long memos no one ever finishes. You should be direct, choose your words carefully and edit rigorously. There should be no extraneous words in your memo.
2. Organize your memo around meaningful sections. Repeat the memo's most salient points and conclusions in the section headers. These will help guide the reader quickly through your memo.
Examples: Alternatives: Law Enforcement or Military Intervention?
Criteria for Decision Making
Fewer Attacks, But Greater Lethality

Start each paragraph with a topic sentence that summarizes its main point. A reader should be able to follow the flow of your memo just by reading the first sentence of each paragraph.

Examples:

Section: In this section I review Hamas' evolution from a splinter faction of the Muslim Brotherhood into a full-fledged terrorist organization.

Paragraph: Abimael Guzman provided the main ideological spark behind the development of the Shining Path organization in the 1960s.

3. Use formatting to enhance the informational content of your memo. One way to improve ease of readership may be through the use of tables, figures, and bullet points. The goal in all cases is to say more with less. Make sure when you use these that they actually enhance understanding and don't just look cool. Use narrative or bulleted lists to establish structure and convey simple ideas (for example, "Proponents of copyright reform advance three basic arguments: first, ...; second, ...; third.") Avoid long lists (which can sometimes become confusing and lose the flow of argument). Tables and figures should allow the reader to understand more while reading fewer words – if you have to spend a page explaining a figure you probably should drop it. If bullet lists or tables become too short or cryptic however, they may not help your cause.
4. Write for an audience that is interested and knowledgeable but not expert. Don't write a memo that only you and three other experts can understand. Avoid technical jargon and bureaucratese, and explain any technical terms that you bring in. Make your memo self-contained and comprehensive enough (while keeping it short!) to enable others to understand the basis for your conclusions.
5. Provide citations to your sources of information within the text of the memo (Litman 1999) and include a list of references or works cited at the conclusion of the memo. Obey whatever citation formatting norms are in place where you work. [In this class, I am okay with any standard referencing format, as long as: a) it is used consistently throughout the memo; and b) all sources are clearly and comprehensively identified (e.g., if an online news story, not just the URL, but author, title, date, URL, and date accessed).

IV. ANALYSIS & ARGUMENTATION

The fundamental purpose of a policy memo is to help people make decisions. Your memo should provide exactly as much background and description as is required to allow you reader to understand your analysis and no more. Even if you are asked to provide background or an overview of an issue, event, person, or group, your goal is to analyze, not merely describe. When necessary, descriptions of historical periods should aim to illustrate the key themes relevant to current policy debates. Likewise, when you are making a case for a policy option, your memo must persuade through logical argument, not simple recitation of facts and assertions. In cases where there are important contrary positions (for example, in the network neutrality memo) it is important that BOTH (or all) major positions are adequately researched and represented, regardless of what your eventual position and recommendations will be – no points for straw men! Your work should also be supported by appropriate external references and support – this is not just your opinion but draws on reasoned arguments and evidence that support your analysis and recommendations for action.

VII. CONCLUSION FORMAT

Your conclusion should reemphasize your main points and recommendations. How exactly you do this will depend on the purpose of your memo. Generally speaking, however, the conclusion is the place to explore the implications of your analysis and recommendations. What arguments or policies do they call into question, which do they reinforce? What additional analysis seems required? What other key decisions must be made in light of your work?

VII. VETTING

Ask a friend or colleague to read your memo. It can be especially helpful to have someone from outside your field read your work. Helpful questions to ask yourself before submitting your memo include:

- Does my introduction provide a clear summary of the memo?
- Is my main point(s) clear?
- Is the organization clear and are all sections and paragraphs presented in a logical manner?
 - Can my reader easily follow the memo?
- Can someone outside the immediate topic area understand my writing?

VIII. BEAUTY TIPS

Your memo should dress for success. Check your work for spelling and grammar errors. Legible font sizes (3-4 pages, single-spaced, 12-pt font!), reasonable margins (1”), good paper, and high printing quality (if submitting paper form) are essential.

Steven J. Jackson, Cornell University
(adapted from “How To Write a Policy Memo”, A. Trevor Thrall
University of Michigan – Dearborn, 2006)