

data-ppf.github.io Apr 16, 2019

lecture 12 of 14: 'what we talk about when we talk about ethics'

chris wiggins + matt jones, Columbia

themes for today (1970-last month)

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016
 - ▶ tech

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016
 - ▶ tech
 - ▶ ethics/privacy

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016
 - ▶ tech
 - ▶ ethics/privacy
 - ▶ interpretability/fairness

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016
 - ▶ tech
 - ▶ ethics/privacy
 - ▶ interpretability/fairness
- ▶ today: how researchers *define* ethics (1974-1979)

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016
 - ▶ tech
 - ▶ ethics/privacy
 - ▶ interpretability/fairness
- ▶ today: how researchers *define* ethics (1974-1979)
 - ▶ areas missed by the pre-digital, 1970s approach

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016
 - ▶ tech
 - ▶ ethics/privacy
 - ▶ interpretability/fairness
- ▶ today: how researchers *define* ethics (1974-1979)
 - ▶ areas missed by the pre-digital, 1970s approach
- ▶ today: how researchers *design for* ethics

themes for today (1970-last month)

- ▶ reminder: last week=AI2.0 1998-2016
 - ▶ tech
 - ▶ ethics/privacy
 - ▶ interpretability/fairness
- ▶ today: how researchers *define* ethics (1974-1979)
 - ▶ areas missed by the pre-digital, 1970s approach
- ▶ today: how researchers *design for* ethics
 - ▶ remaining 2 weeks: political dynamics of data ethics IRL

sidenote: “history: who cares?”

sidenote: “history: who cares?”

- ▶ belmont 1 of many ethics

the principles-based approach is sufficiently general that it will be helpful no matter where you work (e.g., university, government, NGO, or company).

sidenote: “history: who cares?”

- ▶ belmont 1 of many ethics
- ▶ they worked *so hard*

the principles-based approach is sufficiently general that it will be helpful no matter where you work (e.g., university, government, NGO, or company).

sidenote: “history: who cares?”

- ▶ belmont 1 of many ethics
- ▶ they worked *so hard*
- ▶ influenced *so much* (all researchers, even FB)

the principles-based approach is sufficiently general that it will be helpful no matter where you work (e.g., university, government, NGO, or company).

sidenote: “history: who cares?”

- ▶ belmont 1 of many ethics
- ▶ they worked *so hard*
- ▶ influenced *so much* (all researchers, even FB)
- ▶ has been *so stress-tested* (abundant literature)

the principles-based approach is sufficiently general that it will be helpful no matter where you work (e.g., university, government, NGO, or company).

student observations

readings: Salganik, Sweeney, Swisher

"the Road to Belmont"

- ▶ Tuskegee as flash point

THE NEW YORK TIMES

HOME

SEARCH ARCHIVE

INDEX

WEDNESDAY, JULY 26, 1972

SUBJECTS

Syphilis Victims in U.S. Study Went Untreated for 40 Years

SYPHILIS VICTIMS GOT NO THERAPY

WASHINGTON, July 25 — For 40 years the United States Public Health Service has conducted a study in which human beings with syphilis, who were induced to serve as guinea pigs, have gone without medical

in both houses of Congress. The 50 per cent of the nation's 500,000 syphilis victims who are in the study will be eligible for treatment, which has in the past been withheld from many of the victims.

Dr. Martin E. Davis, assistant director of the Division of Venereal Diseases, said that the study was not intended to harm the victims, but to help them.

He reflected in the House that making the study a permanent one would help the victims.

Continued on Page 1, Column 1

Syphilis Victims in U.S. Study Went Untreated for 40 Years

By HELEN BELZER

WASHINGTON, July 25 (AP) — A study of 50,000 syphilis victims in the United States Public Health Service has been conducted for 40 years in which human beings were induced to serve as guinea pigs, and many of them have gone without medical treatment for the disease.

Dr. Martin E. Davis, assistant director of the Division of Venereal Diseases, said that the study was not intended to harm the victims, but to help them.

He reflected in the House that making the study a permanent one would help the victims.

Continued on Page 1, Column 1

Tuskegee and race

ARCHIVES | Syphilis Victims in U.S. Study Went Untreated for 40 Years

The experiment, called the Tuskegee Study, began in 1932 with about 600 black men mostly poor and uneducated, from Tuskegee, Ala., an area that had the highest syphilis rate in the nation at the time.

Four hundred of the group had syphilis and never received deliberate treatment for the Venereal Infection. A control group of 200 had no syphilis and did not receive any specific therapy.

Some subjects were added to the study In its early years to replace men who had dropped out of the program, but the number added is not known. At the beginning of this year, 74 of those who received no treatment were still alive.

As Incentives to enter the Program, the men were promised free transportation to and from hospitals, free hot lunches, free medicine for any disease other than syphilis and free burial after autopsies were performed.

Could Have Been Helped

The Tuskegee Study began 10 years before penicillin was found to be a cure for syphilis and 15 years before the drug became widely available

Tuskegee and race, 2

THE EXPERIMENT AND HEW'S ETHICAL REVIEW

Racism and Research: The Case of the Tuskegee Syphilis Study

by ALLAN M. BRANDT

Figure 3: power, examined

Tuskegee and race, 3

ALLAN M. BRANDT is a doctoral candidate in the Department of History, Columbia University. He is presently writing a social history of venereal disease in the United States. Mr. Brandt was a student intern at The Hastings Center in 1977.

Figure 4: power, examined – grad student

*Amalie Kass Professor of History of Medicine and
Professor of t. . . The Cigarette Century: The Rise, Fall,
and Deadly Persistence of the Product that Defined
America*

Tuskegee: ‘never clandestine’

ARCHIVES | Syphilis Victims in U.S. Study Went Untreated for 40 Years

‘Never Clandestine’

The syphilis study “was never clandestine” and 15 scientific reports were published in the medical literature, Dr. Millar said in a telephone interview yesterday from Atlanta.

Officials who initiated the study in 1932 had informed the syphilis victims that they could get treatment for the infection at any time, Dr. Millar said.

“Patients were not denied drugs,” Dr. Millar stressed. Rather, they were not offered drugs.

When the study began, doctors could offer only what is now regarded as poor therapy—injections of metals like bismuth, arsenic and mercury. Such treatments were known to be toxic.

Many doctors, Dr. Miller said, then thought “it better not to treat syphilis cases because of the mortality from” the metal therapies.

The critical period in ethics was in the late nineteen lforties and early nineteen-fifties when antibiotics could have been but were not

“the Road to Belmont”

- ▶ Tuskegee as flash point

“the Road to Belmont”

- ▶ Tuskegee as flash point
 - ▶ fed \$

“the Road to Belmont”

- ▶ Tuskegee as flash point
 - ▶ fed \$
 - ▶ all the horror and history of American race+power+science in 1 headline

“the Road to Belmont”

- ▶ Tuskegee as flash point
 - ▶ fed \$
 - ▶ all the horror and history of American race+power+science in 1 headline
- ▶ A1 of NYT 1973-07-26

“the Road to Belmont”

- ▶ Tuskegee as flash point
 - ▶ fed \$
 - ▶ all the horror and history of American race+power+science in 1 headline
- ▶ A1 of NYT 1973-07-26
- ▶ 1974-05-30: regulations published

“the Road to Belmont”

- ▶ Tuskegee as flash point
 - ▶ fed \$
 - ▶ all the horror and history of American race+power+science in 1 headline
- ▶ A1 of NYT 1973-07-26
- ▶ 1974-05-30: regulations published
- ▶ 1974-12-03/04: 1st meeting of commission

“the Road to Belmont”

- ▶ Tuskegee as flash point
 - ▶ fed \$
 - ▶ all the horror and history of American race+power+science in 1 headline
- ▶ A1 of NYT 1973-07-26
- ▶ 1974-05-30: regulations published
- ▶ 1974-12-03/04: 1st meeting of commission
- ▶ 1978-09-08: 43rd (final) meeting of Commission

“the Road to Belmont”

- ▶ Tuskegee as flash point
 - ▶ fed \$
 - ▶ all the horror and history of American race+power+science in 1 headline
- ▶ A1 of NYT 1973-07-26
- ▶ 1974-05-30: regulations published
- ▶ 1974-12-03/04: 1st meeting of commission
- ▶ 1978-09-08: 43rd (final) meeting of Commission
- ▶ 1979-04-18: federal register, i.e., law

Belmont report

- ▶ Beauchamp: “consultant philosopher”

“the project of creating a framework of basic principles for all federally funded research had been mandated by a public law enacted by the us congress”

“the national commission viewed these principles as embedded in preexisting public morality”

Belmont: outputs

- ▶ report, 1979-04-10, 10pp

Belmont: outputs

- ▶ report, 1979-04-10, 10pp
- ▶ recommends IRB, 1978-09-01, 132pp

Belmont: outputs

- ▶ report, 1979-04-10, 10pp
- ▶ recommends IRB, 1978-09-01, 132pp
- ▶ appendix v1 “78-0013”: 611pp

Belmont: outputs

- ▶ report, 1979-04-10, 10pp
- ▶ recommends IRB, 1978-09-01, 132pp
- ▶ appendix v1 "78-0013": 611pp
- ▶ appendix v2 "78-0014": 705pp

Principlism: granularity

- ▶ “frameworks->principles->rules” (Salg)

Code is the most significant form of law that humans have ever been exposed to

Principlism: granularity

- ▶ “frameworks->principles->rules” (Salg)
- ▶ “principles->standards->rules” (con law)

Code is the most significant form of law that humans have ever been exposed to

Principlism: granularity

- ▶ “frameworks->principles->rules” (Salg)
- ▶ “principles->standards->rules” (con law)
- ▶ cf. “code is law” (Lessig)¹

Code is the most significant form of law that humans have ever been exposed to

¹Lessig, L. (1999,2009). Code: And other laws of cyberspace.

Principlism: tension

- ▶ “clarifies trade-offs. . . striking balance”

Principlism: tension

- ▶ “clarifies trade-offs. . .striking balance”
- ▶ ethical uncertainty prevents research

Principlism: tension

- ▶ “clarifies trade-offs. . . striking balance”
- ▶ ethical uncertainty prevents research
 - ▶ Ebola 2014

Principlism: tension

- ▶ “clarifies trade-offs. . . striking balance”
- ▶ ethical uncertainty prevents research
 - ▶ Ebola 2014
 - ▶ Sweeney’s work

Principles

- ▶ Belmont

Principles

- ▶ Belmont
 - ▶ person-hood

Principles

- ▶ Belmont
 - ▶ person-hood
 - ▶ informed consent, thus transparency

Principles

- ▶ Belmont
 - ▶ person-hood
 - ▶ informed consent, thus transparency
 - ▶ beneficence

Principles

- ▶ Belmont
 - ▶ person-hood
 - ▶ informed consent, thus transparency
 - ▶ beneficence
 - ▶ do no harm: not just to participants, e.g., society

Principles

- ▶ Belmont
 - ▶ person-hood
 - ▶ informed consent, thus transparency
 - ▶ beneficence
 - ▶ do no harm: not just to participants, e.g., society
 - ▶ “broader impact” (e.g., reproducibility)

Principles

- ▶ Belmont
 - ▶ person-hood
 - ▶ informed consent, thus transparency
 - ▶ beneficence
 - ▶ do no harm: not just to participants, e.g., society
 - ▶ “broader impact” (e.g., reproducibility)
 - ▶ justice

Principles

- ▶ Belmont
 - ▶ person-hood
 - ▶ informed consent, thus transparency
 - ▶ beneficence
 - ▶ do no harm: not just to participants, e.g., society
 - ▶ “broader impact” (e.g., reproducibility)
 - ▶ justice
 - ▶ fairness

Principles other than Belmont

- ▶ Menlo addendum

Principles other than Belmont

- ▶ Menlo addendum
- ▶ Beauchamp

Principles other than Belmont

- ▶ Menlo addendum
- ▶ Beauchamp
- ▶ Google AI

Principles other than Belmont

- ▶ Menlo addendum
- ▶ Beauchamp
- ▶ Google AI
- ▶ FAT/FATE/FATESS

Principles other than Belmont

- ▶ Menlo addendum
- ▶ Beauchamp
- ▶ Google AI
- ▶ FAT/FATE/FATESS
- ▶ ...

Alternatives

- ▶ normative ethics

Alternatives

- ▶ normative ethics
- ▶ virtue ethics

Alternatives

- ▶ normative ethics
- ▶ virtue ethics
- ▶ parables

Alternatives

- ▶ normative ethics
- ▶ virtue ethics
- ▶ parables
- ▶ checklists

Alternatives

- ▶ normative ethics
- ▶ virtue ethics
- ▶ parables
- ▶ checklists
- ▶ utilitarian

Alternatives

- ▶ normative ethics
- ▶ virtue ethics
- ▶ parables
- ▶ checklists
- ▶ utilitarian
- ▶ Kantian

Alternatives

- ▶ normative ethics
- ▶ virtue ethics
- ▶ parables
- ▶ checklists
- ▶ utilitarian
- ▶ Kantian
- ▶ casuistry

What's missing from Belmont?

- ▶ Privacy

What's missing from Belmont?

- ▶ Privacy
- ▶ Informed consent 2.0

What's missing from Belmont?

- ▶ Privacy
- ▶ Informed consent 2.0
 - ▶ see your local paper

Ethics: define vs design (intra mūrōs)

- ▶ 'accountability'

Ethics: define vs design (intra mūrōs)

- ▶ 'accountability'
- ▶ IRB "most [scientists] experience ethical debate. . . through the bureaucratic process of IRB"

Ethics: define vs design (intra mūrōs)

- ▶ 'accountability'
- ▶ IRB "most [scientists] experience ethical debate. . . through the bureaucratic process of IRB"
 - ▶ why limit researchers? "IRBs in the United States are required to include at least one non-researcher."

researchers Q:

*so long as most of these principles rely on the
interpretation of researchers, making them prone to biases,
we have a long way to go*

–Bennett Brown

Belmont A:

The Commission's deliberations on Institutional Review Boards began with the premise that investigators should not have sole responsibility for determining whether research involving human subjects fulfills ethical standards. Others who are independent of the research must share this responsibility, because investigators have a potential conflict by virtue of their concern with the pursuit of knowledge as well as the welfare of the human subjects of their research.

1978-09-01 IRB recommendation

Ethics: define vs design (extra mūrōs)

- ▶ ORB (Jackman + Kanerva 2016)

Ethics: define vs design (extra mūrōs)

- ▶ ORB (Jackman + Kanerva 2016)
- ▶ what else is there?

Ethics: define vs design (extra mūrōs)

- ▶ ORB (Jackman + Kanerva 2016)
- ▶ what else is there?
 - ▶ design as ethics

Ethics: define vs design (extra mūrōs)

- ▶ ORB (Jackman + Kanerva 2016)
- ▶ what else is there?
 - ▶ design as ethics
 - ▶ agile software as ethics

Ethics: define vs design, and principles

INTERVIEWER: You have to feel good about it today.

DR. BEAUCHAMP: Well, yeah, it worked out well, exactly.

INTERVIEWER: Did you expect that the report would be translated as the basis for regulations to the extent that it was?

DR. BEAUCHAMP: No, it is a surprise to me, today, that that happened and that it continues to sustain the kind of interest that it sustained.

Sweeney

Bio on Sweeney

- ▶ PhD in CS, MIT w/Hal Abelson

Bio on Sweeney

- ▶ PhD in CS, MIT w/Hal Abelson
- ▶ prior work:

Bio on Sweeney

- ▶ PhD in CS, MIT w/Hal Abelson
- ▶ prior work:
 - ▶ “arrest records” & name search results 2013

Bio on Sweeney

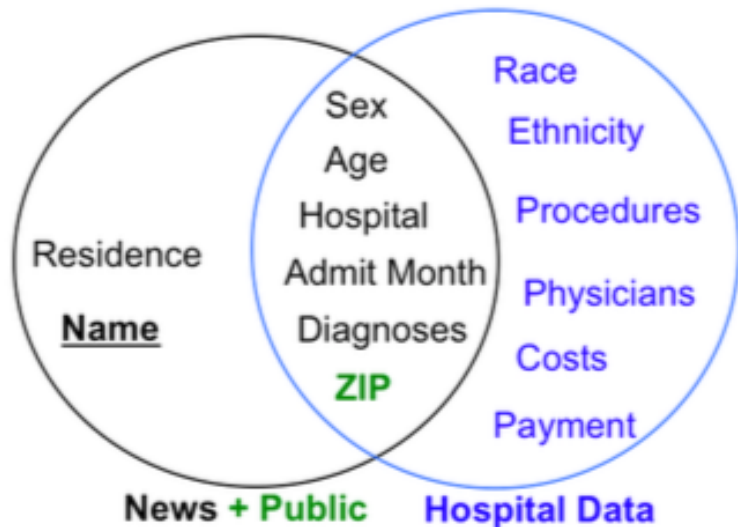
- ▶ PhD in CS, MIT w/Hal Abelson
- ▶ prior work:
 - ▶ “arrest records” & name search results 2013
 - ▶ more than I can list. . . .

Sweeney insight on code and law

“The design of the technology, and how it works is really the new policy. And the thing about these designs as policymakers is that we didn’t vote for them, we didn’t elect them, and we didn’t have any say in the things that they believed in. And yet, the decisions that they make turn out to be the rules that we have to live by.”

- ▶ FAT-star conference 2018, NYU

Sweeney method



Key technical idea:

- ▶ public columns as composite key

Key technical idea:

- ▶ public columns as composite key
- ▶ tech way out: k-anonymity

Key technical idea:

- ▶ public columns as composite key
- ▶ tech way out: k-anonymity
- ▶ mentioned in passing: differential privacy (2006, MSR)

Key technical idea:

- ▶ public columns as composite key
- ▶ tech way out: k-anonymity
- ▶ mentioned in passing: differential privacy (2006, MSR)
 - ▶ see also [article](#) in your local paper by your local statistician
j-school prof/Brown institute director

Key technical idea:

- ▶ public columns as composite key
- ▶ tech way out: k-anonymity
- ▶ mentioned in passing: differential privacy (2006, MSR)
 - ▶ see also [article](#) in your local paper by your local statistician
j-school prof/Brown institute director
- ▶ related: what even is privacy?

What even is privacy?

In *Privacy in Context: Technology, Policy, and the Integrity of Social Life*,⁷ I give an account of privacy in terms of expected flows of personal information, modeled with the construct of *context-relative informational norms*. The key parameters of informational norms are actors (subject, sender, recipient), attributes (types of information), and transmission principles (constraints under which information flows). Generally, when the flow of information adheres to entrenched norms, all is well; violations of these norms, however, often result in protest and complaint. In a health care context, for example, patients expect their physicians to keep personal medical information confidential, yet they accept that it might be shared with specialists as needed. Patients' expectations would be breached and they would likely be shocked and dismayed if they learned that their physicians had sold the information to a marketing company. In this event, we would say that informational norms for the health care context had been violated.

Figure 6: fig/hn

reference: Helen Nissenbaum, *Privacy in Context: Technology, Policy, and the Integrity of Social Life* (2010).

from "Nissenbaum, Helen." A contextual approach to privacy online." *Daedalus* 140, no. 4 (2011): 32-48."

Beneficence & disclosure, 1/3

While the court praised my skill and advocates dubbed me “the goddess of re-identification,” the court ordered knowledge of my method sealed, barring me from publication. Similar fates awaited my other early re-identifications of survey and pharmaceutical data.

Beneficence & disclosure, 2/3

Computer-science publications refused to publish re-identification experiments unless the paper also included a technological solution, notwithstanding assertions that publishing these experiments would inspire technological innovation to address the real-world problem.

Beneficence & disclosure, 3/3

funding sources refused to fund re-identification experiments unless there was a promise that results would likely show that no risk existed or that all problems could be solved by some promising new theoretical technology under development. Financial resources were unavailable to support rigorous scientific studies otherwise.

Sweeney: response 1/2

What Can Be Done

The goal is not to stop data-sharing. On the contrary, sharing data about patient encounters offers many worthy benefits to society. These data may be particularly useful because they contain a complete set of hospital discharges within the state, thereby allowing comparisons across regions and states of hospital and physician performance and assessing variations and trends in care, access, charges, and outcomes. Research studies that used these datasets include: examinations of utilization differences based on proximity [18], patient safety [19] [20], and procedures [21], and a comparison of motorcycle accident results in states with and without helmet laws [22]. The very completeness that helps these studies makes it impossible to rely on patient consent to sharing because the resulting data would not be as complete.

Figure 7: reacts, 1/2

Sweeney: response 2/2

What Can Be Done

The goal is not to stop data-sharing. On the contrary, sharing data about patient encounters offers many worthy benefits to society. These data may be particularly useful because they contain a complete set of hospital discharges within the state, thereby allowing comparisons across regions and states of hospital and physician performance and assessing variations and trends in care, access, charges, and outcomes. Research studies that used these datasets include: examinations of utilization differences based on proximity [18], patient safety [19] [20], and procedures [21], and a comparison of motorcycle accident results in states with and without helmet laws [22]. The very completeness that helps these studies makes it impossible to rely on patient consent to sharing because the resulting data would not be as complete.

Another goal is to be smarter about how we perform data sharing. This is particularly important as the top buyers of statewide databases are not researchers but private companies, especially those constructing data profiles on individuals [23].

Figure 8: reacts, 2/2

Swisher: WSJ->Recode/Your Local Paper

Swisher: WSJ->Recode/Your Local Paper

- ▶ Background: AI now

Swisher: WSJ->Recode/Your Local Paper

- ▶ Background: AI now
 - ▶ recall kate Crawford from week 1

Swisher: WSJ->Recode/Your Local Paper

- ▶ Background: AI now
 - ▶ recall kate Crawford from week 1
 - ▶ Meredith w: 10 yrs at GOOG

Ethics Theater

I think, in the wake of these controversies, there has been kind of ethics theater, almost. We actually look at this in our 2018 report, where we looked into these a little bit. All of these questions around, "What do these boards actually do," right? Are product decisions run by them? Can they cancel a product decision? Do they have veto power otherwise? Is there any documentation on whether their advice was taken or whether it was not?"

- ▶ define vs design

see ethics washing

dataethics.eu

1. External Participation: early and regular engagement with all relevant stakeholders.

Wagner, Ben. "Ethics as an Escape from Regulation: From ethics-washing to ethics-shopping?." Being Profiling. Cogitas Ergo Sum (2018).

see ethics washing

dataethics.eu

1. External Participation: early and regular engagement with all relevant stakeholders.
2. Provide a mechanism for external independent oversight.

Wagner, Ben. "Ethics as an Escape from Regulation: From ethics-washing to ethics-shopping?." Being Profiling. Cogitas Ergo Sum (2018).

see ethics washing

dataethics.eu

1. External Participation: early and regular engagement with all relevant stakeholders.
2. Provide a mechanism for external independent oversight.
3. Ensure transparent decision-making procedures on why decisions were taken.

Wagner, Ben. "Ethics as an Escape from Regulation: From ethics-washing to ethics-shopping?." Being Profiling. Cogitas Ergo Sum (2018).

see ethics washing

dataethics.eu

1. External Participation: early and regular engagement with all relevant stakeholders.
2. Provide a mechanism for external independent oversight.
3. Ensure transparent decision-making procedures on why decisions were taken.
4. Develop a stable list of non-arbitrary of standards where the selection of certain values, ethics and rights over others can be plausibly justified.

Wagner, Ben. "Ethics as an Escape from Regulation: From ethics-washing to ethics-shopping?." Being Profiling. Cogitas Ergo Sum (2018).

see ethics washing

dataethics.eu

1. External Participation: early and regular engagement with all relevant stakeholders.
2. Provide a mechanism for external independent oversight.
3. Ensure transparent decision-making procedures on why decisions were taken.
4. Develop a stable list of non-arbitrary of standards where the selection of certain values, ethics and rights over others can be plausibly justified.
5. Ensure that ethics do not substitute fundamental rights or human rights.

Wagner, Ben. "Ethics as an Escape from Regulation: From ethics-washing to ethics-shopping?." Being Profiling. Cogitas Ergo Sum (2018).

see ethics washing

dataethics.eu

1. External Participation: early and regular engagement with all relevant stakeholders.
2. Provide a mechanism for external independent oversight.
3. Ensure transparent decision-making procedures on why decisions were taken.
4. Develop a stable list of non-arbitrary of standards where the selection of certain values, ethics and rights over others can be plausibly justified.
5. Ensure that ethics do not substitute fundamental rights or human rights.
6. Provide a clear statement on the relationship between the commitments made and existing legal or regulatory frameworks, in particular on what happens when the two are in conflict.

Wagner, Ben. "Ethics as an Escape from Regulation: From ethics-washing to ethics-shopping?." Being Profiling. Cogitas Ergo Sum (2018).

Apex Predator Problem

Currently the loudest voices debating the potential dangers of superintelligence are affluent white men, and, perhaps for them, the biggest threat is the rise of an artificially intelligent apex predator.

<https://www.nytimes.com/2016/06/26/opinion/sunday/artificial-intelligences-white-guy-problem.html>

power and principles

how did new capabilities rearrange power? who can now do what, from what, to whom?

- ▶ re-identification

how did new capabilities rearrange power? who can now do what, from what, to whom?

- ▶ re-identification
- ▶ Recode tech:

how did new capabilities rearrange power? who can now do what, from what, to whom?

- ▶ re-identification
- ▶ Recode tech:
 - ▶ face recognition

how did new capabilities rearrange power? who can now do what, from what, to whom?

- ▶ re-identification
- ▶ Recode tech:
 - ▶ face recognition
 - ▶ credit scores. . .

how did new capabilities rearrange power? who can now do what, from what, to whom?

- ▶ re-identification
- ▶ Recode tech:
 - ▶ face recognition
 - ▶ credit scores. . .
 - ▶ predictive policing from police data. . .

how did new capabilities rearrange power? who can now do what, from what, to whom?

- ▶ re-identification
- ▶ Recode tech:
 - ▶ face recognition
 - ▶ credit scores. . .
 - ▶ predictive policing from police data. . .
 - ▶ hiring from hiring data. . .

role of rights, harms, justice?

foreshadowing data for Thursday

foreshadowing data for Thursday

- ▶ privacy & FAT lab

reminder of themes/big main takeaways

themes

up next

- ▶ 4/23: the business of data

up next

- ▶ 4/23: the business of data
 - ▶ the attention economy, 1971->present

up next

- ▶ 4/23: the business of data
 - ▶ the attention economy, 1971->present
 - ▶ venture: accelerant and destabilizer

up next

- ▶ 4/23: the business of data
 - ▶ the attention economy, 1971->present
 - ▶ venture: accelerant and destabilizer
 - ▶ attention economy+venture=information platforms

up next

- ▶ 4/23: the business of data
 - ▶ the attention economy, 1971->present
 - ▶ venture: accelerant and destabilizer
 - ▶ attention economy+venture=information platforms
- ▶ 4/30: our future

up next

- ▶ 4/23: the business of data
 - ▶ the attention economy, 1971->present
 - ▶ venture: accelerant and destabilizer
 - ▶ attention economy+venture=information platforms
- ▶ 4/30: our future
 - ▶ corporate power

up next

- ▶ 4/23: the business of data
 - ▶ the attention economy, 1971->present
 - ▶ venture: accelerant and destabilizer
 - ▶ attention economy+venture=information platforms
- ▶ 4/30: our future
 - ▶ corporate power
 - ▶ state power

up next

- ▶ 4/23: the business of data
 - ▶ the attention economy, 1971->present
 - ▶ venture: accelerant and destabilizer
 - ▶ attention economy+venture=information platforms
- ▶ 4/30: our future
 - ▶ corporate power
 - ▶ state power
 - ▶ people power

appendix

appendix

- ▶ 2019-01-22: 1 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14
- ▶ 2019-03-12: 8 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14
- ▶ 2019-03-12: 8 of 14
- ▶ 2019-03-26: 9 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14
- ▶ 2019-03-12: 8 of 14
- ▶ 2019-03-26: 9 of 14
- ▶ 2019-04-02: 10 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14
- ▶ 2019-03-12: 8 of 14
- ▶ 2019-03-26: 9 of 14
- ▶ 2019-04-02: 10 of 14
- ▶ 2019-04-09: 11 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14
- ▶ 2019-03-12: 8 of 14
- ▶ 2019-03-26: 9 of 14
- ▶ 2019-04-02: 10 of 14
- ▶ 2019-04-09: 11 of 14
- ▶ 2019-04-16: 12 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14
- ▶ 2019-03-12: 8 of 14
- ▶ 2019-03-26: 9 of 14
- ▶ 2019-04-02: 10 of 14
- ▶ 2019-04-09: 11 of 14
- ▶ 2019-04-16: 12 of 14
- ▶ 2019-04-23: 13 of 14

appendix

- ▶ 2019-01-22: 1 of 14
- ▶ 2019-01-29: 2 of 14
- ▶ 2019-02-05: 3 of 14
- ▶ 2019-02-12: 4 of 14
- ▶ 2019-02-19: 5 of 14
- ▶ 2019-02-26: 6 of 14
- ▶ 2019-03-05: 7 of 14
- ▶ 2019-03-12: 8 of 14
- ▶ 2019-03-26: 9 of 14
- ▶ 2019-04-02: 10 of 14
- ▶ 2019-04-09: 11 of 14
- ▶ 2019-04-16: 12 of 14
- ▶ 2019-04-23: 13 of 14
- ▶ 2019-04-30: 14 of 14