MSBA 5507.1 Ethics, Risk Management and Data Security

Data Ethics
July 8, 2023

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Office hours: Wed 1-3 pm

```python
class HealthState:
    def __init__(self, utility, duration):
        self.utility = utility
        self.duration = duration


def calculate_qaly(health_states):
    qaly = 0
    for state in health_states:
        qaly += state.utility * state.duration
    return qaly


# Example usage
health_state_1 = HealthState(0.8, 5)
health_state_2 = HealthState(0.9, 10)


health_states = [health_state_1, health_state_2]


total_qaly = calculate_qaly(health_states)
print("Total QALY:", total_qaly)
```

Utilitarian Ethics
Quality-Adjusted Life Year (QALY)
Model aims to quantify the utility of different medical interventions or health outcomes.

TOPIC	DESCRIPTION
Final	Teams and Sample Placemats & Infographics ==Schedule ½ hour meeting by team the week of July 10-14th to discuss==

Team 1	Team 2	Team 3	Team 4
Zero Trust	**Autoregressive Language Model**	**Data Robotic Process Automation**	**Transparency**
Peiqi Li	Rana Demirer	Addrianna Brychczynska	Francesco Coccaro
Reed Felder	Jacqueline Ocana	Crystal Martinez	Angie Menjivar
Jacob Eide	Kohsuke Uchimura	Rene Lucha	Andrea Capella-Castro
Matthew Mueller	Rahmat Ullah	Madison Connell	Patrick Kelly
			Nicole Gutierrez

Recap	First Class

Examine the data practice:

Key Points

- ❑ Unfair
- ❑ Deceptive
- ❑ Not accurate

- An act or omission
- Some duty/responsibility
- Not reasonable
- Causes harm

Typically concerning
- Collection
- Use
- Processing
- Protection
- Storage
- Disclosure
- Destruction

- ❑ Williams versus Detroit
- ❑ FTC versus RealPage

Data Ethics

Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part IV - Ethical frameworks

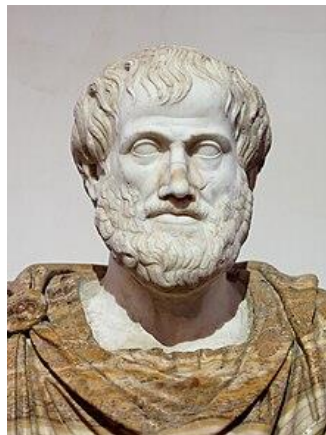"Ethics in the broadest sense refers to the concern that humans have always had for figuring out *how best to live*"
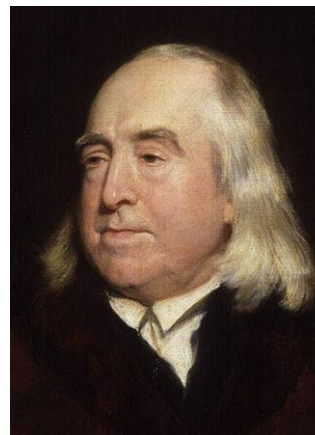
❑ Theoretical ethical frameworks (Part IV)

Discussion

❑ Virtue	❑ Consequential/Utilitarian	❑ Deontological
Aristotle (384bc-332bc) by Lysippos	Jeremy Bentham 1748-1832) by Henry William Pickersgill	Immanuel Kant (1724-1804) by Johann Gottlieb Becker

Data Ethics   Nathan Colaner - Albers School of Business and Economics, University of Seattle

Discussion

Ethics – Concern for human well-being

❑ Well-being of others

　❑ Suffering

　❑ Equality

❑ My well being

　❑ Character

　❑ Trust

René Carmille

Photo: Julien Demade/Wikipedia

TOPIC	DESCRIPTION
Data Ethics	Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part I - Ethically significant harms and benefits
Discussion	❑ What makes a harm or benefit 'ethically significant'? ❑ Human choice ❑ Material life interest ❑ What significant ethical benefits and harms are linked to data ❑ Benefits ❑ Human understanding ❑ Social, institutional and economic efficiency ❑ Predictive, accuracy and personalization ❑ Harms ❑ Security and privacy ❑ Fairness (bias) and justice ❑ Transparency and autonomy ❑ Add – Unfair and deceptive

Data Ethics   Fairness and justice: ask who is benefited and who is harmed?

Notions of Fairness   **Bias Harms**

	Allocation (resources)	Representation (identity)
❑ Scientific/ technical	❑ Immediate	❑ Long-term
	❑ Quantifiable	❑ Formularization difficult
❑ Societal	❑ Discrete	❑ Diffuse
	❑ Transactional	❑ Cultural

Discussion

Withholds an opportunity or resource   Stereotypes, denigrates, underrepresents

Kate Crawford, https://www.youtube.com/watch?v=fMym_BKWQzk

TOPIC	DESCRIPTION

Data Ethics   Transparency and autonomy

Discussion

❑ Autonomy aims to protect individual choice, rights, and freedoms against the control of organizations, the state or other people

❑ Through transparency we seek to know what data it is being acquired, who can access it, where it is stored, how it's being used, how and when its being destroyed
  - ❑ Are data sets too large?
  - ❑ Are models too complex?
  - ❑ Do we know how a system is learning/or making a decision?

Michael Kearns and Aaron Roth, **The Ethical Algorithm,** Oxford Univ. Press (2020)

TOPIC	DESCRIPTION
Data Ethics	Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part I - Ethically significant harms and benefits
Discussion	Fred and Tamara Case Study (p. 13-14) 1. What ethically significant harms might Fred and Tamara suffer as a result of their loan denial? 2. What sort of ethically significant benefits, as defined in Part One, could come from banks using a big-data driven system to evaluate loan applications? 3. Beyond the impacts on Fred and Tamara's lives, what broader harms to society could result from the widespread use of this particular loan evaluation process? 4. Could the harms have been anticipated by the loan officer, the bank's managers, and/or the software system's designers and marketers? Should they have been anticipated, and why or why not? 5. What measures could the loan officer, the bank's managers, or the employees of the software company have taken to lessen or prevent those harms?

TOPIC	DESCRIPTION
Data Ethics	Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part II - Common ethical challenges
Discussion	Common ethical data challenges ❑ Collection and use ❑ Stewardship ❑ Accuracy and relevance ❑ Bias ❑ Validation and testing ❑ Accountability ❑ Training ❑ Understanding impact

TOPIC	DESCRIPTION
Data Ethics	Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part II - Common ethical challenges
Discussion	Facebook Emotional Contagion Case Study (p. 21-22) 1. Of the eight types of ethical challenges listed, which two types are most relevant to the Facebook emotional contagion study? 2. Were Facebook's users justified and reasonable in reacting negatively to the news of the study? Was the study ethical? Why or why not? 3. To what extent should those involved in the Facebook study have anticipated that the study might be ethically controversial, causing a flood of damaging media coverage and angry public commentary? If the negative reaction could have been anticipated by Facebook researchers and management, why do you think it wasn't? 4. Describe 2 or 3 things Facebook could have done differently, to acquire the benefits of the study in a less harmful, less reputationally damaging, and more ethical way. 5. Who is morally accountable for any harms caused by the study? Within a large organization like Facebook, how should responsibility for preventing unethical data conduct be distributed, and why might that be a challenge to figure out?

TOPIC	DESCRIPTION
Data Ethics	Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part III - Obligations to the public
Discussion	❑ What is a data practitioner's obligation to the public? ❑ How does being a professional create special ethical obligations for the data practitioner?

TOPIC	DESCRIPTION
Data Ethics	Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part III - Obligations to the public
Discussion	OkCupid Case Study (pages 33-34) 1. What specific, significant harms to members of the public did the researchers' actions risk? 2. How should those potential harms have been evaluated alongside the prospective benefits of the research claimed by the study's authors? 3. The lead author repeatedly defended the study on the grounds that the data was technically public. How would you evaluate that argument? 4. The authors clearly did anticipate some criticism of their conduct as unethical, and indeed they received an overwhelming amount of public criticism, quickly and widely. To what extent are big data practitioners answerable to the public for their conduct, or can data practitioners justifiably ignore the public's critical response to what they do? 5. A Danish programmer specifically designed the data scraping software for the study, though he was not a co-author of the study himself. What ethical obligations did he have in the case? 6. How do you think the OkCupid study likely impacted the reputations and professional prospects of the researchers, and of the designer of the scraping software?

| TOPIC	DESCRIPTION
Data Ethics	Shannon Vallor, *An Introduction to Data Ethics*, Markkula Center for Applied Ethics, Santa Clara University, Part V - Ethical best practices
Discussion	Make Ethical Reflection & Practice Standard ❑ Human Lives and Interests ❑ Downstream Risks and Uses ❑ Envision the Data Ecosystem ❑ Treat Data as a Conditional Good ❑ Ethical Responsibility and Accountability ❑ Practice Crisis Response ❑ Promote Values of Transparency, Autonomy, and Trustworthiness ❑ Consider Disparate Interests, Resources, and Impacts ❑ Invite Diverse Stakeholder Input ❑ Design for Privacy and Security

TOPIC	DESCRIPTION
Data Ethics	Perfect Grocery Practice Midterm

What data ethical issues can you spot?

❑ Examine data ecosystem
  ❑ Collection
  ❑ Use

➡️
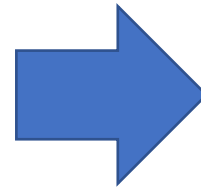
❑ Organize by ethical focus areas
  ❑ Security and privacy
  ❑ Fairness and justice
  ❑ Transparency and autonomy
  ❑ Deceptive and Unfair

Discussion

> Memo: Summary of Perfect Grocery Issues
>
> . . . .
>
> 1. Data Ethics
>   a) Transparency and autonomy
>   Perfect Grocery is not transparent in the collection and use of loyalty data because . . .
>   .
>   Perfect Grocery's use of loyalty data impacts its customers autonomy because . . . .
>   b) Fairness and Justice

TOPIC	DESCRIPTION
Data Ethics	Perfect Grocery Practice Midterm

Discussion

Organize the key facts by topical area and how it impacts an individual or group

		Deceptive/Unfair	Autonomy
Fact One	Privacy policy states that Perfect Grocery will not sell personal data without consent. Yet it sold data to Insurance Companies, who used the data to determine insurability and rates.	Customers were deceived because their data was sold without their consent contrary to the policy. Some customers may be harmed because they will not be able to obtain insurance (or insurance at a rate they can afford)	Perfect Grocery's actions denied Customers of a choice in who receives their data, and for purpose that data is used. It harmed them because . . .
Fact Two			
Fact Three			