IST 402-003
DATA ETHICS

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DESCRIPTION
In this course, we will explore social and ethical dimensions of data science. Datafication can be a powerful force for good, but it can also do tremendous harm—to individuals and society. Drawing primarily from case studies, we will investigate when, why, and how data is collected, stored, analyzed, and used. And looking to philosophical ethics for guidance, we will evaluate the ethical stakes of data-driven systems. In addition to diagnosing ethical problems—e.g., invasions of privacy, discrimination, and lack of accountability—students will be asked to think creatively and constructively about how the tools of data science can be used to realize our shared ethical and social commitments.

GOALS & OBJECTIVES
The central aim of this course is twofold: (1) to help you develop an awareness of and sensitivity to ethical issues in the design and implementation of information technologies, and (2) to provide you with a set of conceptual tools that will enable you to evaluate and articulate those issues with precision. Upon successful completion of this course, you will be able to:
1. Identify and describe ethical issues in the design and implementation of information technologies;
2. Critically evaluate all stages of the data lifecycle, from data collection and storage to data analysis and use;
3. Draw from foundational ideas in normative ethics to ground your analyses;
4. Formulate arguments and counter-arguments in support of your views.

TEXTS
All texts are accessible for free online—either at the URLs listed below or through the course Canvas site. You are not required to purchase any books for this course.

ASSIGNMENTS
This course involves *a lot* of reading, writing, and discussing ideas. Before each class, I expect you to read the assigned reading(s). It wouldn't be a bad idea to read them twice. I *don't* expect you to understand everything you read—that understanding will come from discussing and writing about the texts in class—but I do expect you to be familiar with them. *Take notes*. Underline

parts that pique your interest; bracket parts you don't understand. Look up words you've never heard before. Write down questions that come up as you read, and bring the questions with you to class.

In addition to reading each day's assigned texts and discussing them in class, you will be expected to complete the following written assignments:

Short Papers
During the first half of the semester you will write three short papers, each of which will help you develop and exercise a skill necessary for success in the course. In the first paper, you will demonstrate your ability to articulate a normative argument. The second paper will ask you to identify the broad ethical issues raised by a particular case. In the third paper, you will analyze a case and identify the privacy interests at stake in it. Each paper will be approximately 300-500 words long.

Case Studies
Building off of the skills developed in writing your short papers, in the second half of the semester you will evaluate two case studies. I will provide the cases; you will identify issues of bias (in the first case study) and lack of transparency (in the second case study), explain why the issues have ethical significance, and suggest strategies for resolving them. Each case study will be approximately 500-700 words long.

Final Project
Your final project will bring together the skills and conceptual tools developed throughout the course and apply them in a more open-ended context. Rather than examine canned cases selected by me, you will choose your own case to explore. And in addition to formulating an argument in support of your analysis, you will have the option of presenting your findings in a variety of formats. I will provide more detailed information about the parameters of the project in the second half of the semester. There is no final exam in this course—your final project will be due during the final exam period.

Participation
This class is not about reading texts and regurgitating ideas; it's about developing a critical orientation toward and ethical sensitivity to the design of information technology. That will not happen by listening to me lecture. You have to think, write, and talk about these issues in order to understand and internalize them. To that end, this class will involve a lot of opportunities for student participation. In addition to reading the assigned texts, asking thoughtful questions, offering your own arguments and analysis, and listening carefully to me and your classmate's challenges, we will engage in a variety of individual written exercises, in-class group work, occasional homework assignments, and sporadic quizzes. All such work will count toward your participation grade. Unless otherwise specified, all in-class work must be submitted during the class it's assigned. If you are absent, you can make up the missed points by coming to office hours and discussing what you missed. It is your responsibility to find out from a classmate if you missed graded work. *Do not email me to ask.*

GRADING

Short Papers: 10% each (Total 30%)
Case Studies: 15% each (Total 30%)
Final Project: 20%
Participation: 20%

Grading scale: A (93-100), A- (90-92), B+ (87-89), B (83-86), B- (80-82), C+ (77-79) … F (<60)

EXTRA CREDIT

There is *one and only one* way to get extra credit in this course: you can submit your final project early. If you submit your final project by 11:59PM on December 6th (the day of our last class meeting), I will add 2% points to your final grade for the course.

ATTENDANCE

As I've said, this is the kind of class where you learn by doing—by reading, yes, but also by asking questions, discussing ideas with your classmates, challenging me and being challenged. In order to succeed you have to attend class. You are allowed *three absences without penalty.* But for each absence beyond the allowed three I will deduct 2% points from your final course grade. I don't want to know why you missed class. Life is complicated and things come up—I recommend saving your allowed absences for such occasions. If religious observances, illness, athletic activities, or anything else the University considers an "excused absence" (https://handbook.psu.edu/content/class-attendance) will cause you to miss more than three classes, please come see me to discuss your options. See the "Participation" section, above, for information about missed in-class work.

EMAIL POLICY

I encourage you to email me with any questions or concerns you have about the course or your work in it. However, I am not on call 24 hours/day: I will respond to emails Monday-Friday, 9am-5pm. If you email me at night or on the weekend, do not expect an immediate response. Furthermore, I will not respond to emails if (1) they do not contain a salutation (e.g., "Hi Dr. Susser,…" or "Dear Prof. Susser,…") or (2) the answer to your question is contained in this syllabus or on Canvas. You're an adult! I expect you to send professional correspondence that doesn't look like a text message, and I expect you to have the wherewithal to look for answers first before asking me.

ACADEMIC INTEGRITY

College is stressful. Sometimes we take on too much or otherwise get in over our heads. If you feel overwhelmed or think you might not be able to meet my expectations in this course, please come discuss it with me—I'm 100% sure we can sort it out. If, however, you choose to go the other route, and I discover that you have cheated, plagiarized, or engaged in any other form of academic dishonesty, I will report it to the University immediately and recommend that you fail the course. If you aren't sure whether something counts as plagiarism, please ask!

ACCOMMODATING DISABILITIES

I am committed to *all* students succeeding in this course, and I will do whatever I can (within reason) to ensure that you do. If you have any kind of disability, visible or invisible, learning, emotional, physical, or cognitive, and you need accommodations or alternatives to lectures or other assignments, please contact me—preferably during the first week of class. (Though if something comes up later that you didn't anticipate, you can of course get in touch with me then.) For a variety of reasons it is also wise to formally document your disability with Student Disability Resources in the Office of the Vice Provost for Educational Equity. More information at http://equity.psu.edu/student-disability-resources/

COUNSELING AND PSYCHOLOGICAL SERVICES

It is very common for students to face personal challenges or have psychological needs that interfere with their academic progress or general wellbeing. Please do not try to overcome those challenges on your own! The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation. You can reach University Park CAPS by phone at (814) 863-0395 or online at http://studentaffairs.psu.edu/counseling/

Penn State also has a 24/7 Crisis Phone Line, which you can reach at (877) 229-6400, and a Crisis Text Line, which you can reach by texting LIONS to 741741.

REPORTING BIAS

I take bias and discrimination very seriously, as does the University. If you believe you have experienced or observed a hate crime, an act of intolerance, discrimination, or harassment, I encourage you to come speak with me immediately and/or to report it to the University. More information at http://equity.psu.edu/reportbias/

FIRST ASSIGNMENT

In order to demonstrate that you read the syllabus, please log into our course on Canvas, and *using the Canvas email function* send me an email containing one fact about yourself that you think it would be useful for me to know (subject line: "First Assignment"). This will count as your first participation grade.

COURSE SCHEDULE

The schedule below is an *ideal, approximate*, and therefore *tentative* sketch of things to come. I will adjust it as we go along, in accordance with how slowly or quickly we move through the material. It is your responsibility to come to class and to read the emails I send out in order to keep up with those changes.

Please note: readings and assignments are listed <u>on the day they are due.</u> For example, on August 23rd you should come to class having already skimmed through Leo Marx's essay and having already read Yonatan Zunger's piece.

T 8/21   ***Introductions / Arguments 101***

No reading

TH 8/23   ***Data Science's Ethical Reckoning***

Leo Marx, "Does Improved Technology Mean Progress?" (skim)

Yonatan Zunger, "Computer Science Faces an Ethics Crisis. The Cambridge Analytica Scandal Proves it."

T 8/28   ***Data Science as Human Subjects Research***

The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research
http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html

Mary Gray, "When Science, Customer Service, and Human Subjects Research Collide. Now What?" http://culturedigitally.org/2014/07/when-science-customer-service-and-human-subjects-research-collide-now-what/

TH 8/30   ***Data Science as Engineering***

Lawrence Lessig, "Code is Law"

If you need an introduction to the concept of "sociotechnical systems," read Deborah Johnson and Jameson Wetmore, Introduction to *Technology and Society: Building our Sociotechnical Future* (pp. xiii-xv)

T 9/4   ***Ethics Crash Course, Part 1: Welfare***

Due: Short Paper 1 (Making a Normative Argument)

Michael Sandel, "The Greatest Happiness Principle / Utilitarianism"

TH 9/6   ***Ethics Crash Course, Part 2: Autonomy***

Michael Sandel, "What Matters is the Motive / Immanuel Kant"

T 9/11   ***Ethics Crash Course, Part 3: Fairness***

Michael Sandel, "The Case for Equality / John Rawls"

TH 9/13   ***Ethics Crash Course, Part 4: Flourishing***

Internet Encyclopedia of Philosophy, "Global Ethics: Capabilities Approach" (read Sections 2 and 3) https://www.iep.utm.edu/ge-capab/

T 9/18   ***Check-in/Buffer Day***

TBD

TH 9/20   ***Privacy, Part 1: Control***

Due: Short Paper 2 (Diagnosing an Ethical Issue)

Irwin Altman, "Privacy: Definitions and Properties" (esp. pp. 10-21)

Pam Dixon, "A Brief Introduction to Fair Information Practices" https://www.worldprivacyforum.org/2008/01/report-a-brief-introduction-to-fair-information-practices/

T 9/25   ***Privacy, Part 2: Complicating Control***

Daniel Solove, "Privacy Self-Management and the Consent Dilemma" (pp. 1880-1893)

Watch "danah boyd: Networked Privacy" https://www.youtube.com/watch?v=T8yOz8u4PBw

TH 9/27   ***Privacy, Part 3: Context***

Helen Nissenbaum, "A Contextual Approach to Privacy Online"

T 10/2   ***Privacy, Part 4: Unpopular Privacy***

"Bright Ideas: Anita Allen's Unpopular Privacy" (Interview with Danielle Citron) https://concurringopinions.com/archives/2012/01/bright-ideas-anita-allens-unpopular-privacy.html

"French Parents 'Could Be Jailed' for Posting Children's Photos Online"
https://www.telegraph.co.uk/news/worldnews/europe/france/12179584/French-parents-could-be-jailed-for-posting-childrens-photos-online.html

TH 10/4   Forget Privacy?

Chris Hoofnagle, "The Potemkinism of Privacy Pragmatism"
http://www.slate.com/articles/technology/future_tense/2014/09/data_use_regulation_the_libertarian_push_behind_a_new_take_on_privacy.html

Alvaro Bedoya, "Big Data and the Underground Railroad"
http://www.slate.com/articles/technology/future_tense/2014/11/big_data_underground_railroad_history_says_unfettered_collection_of_data.html

T 10/9   Optional Paper Help

TH 10/11   Guest Lecture: Richard Caneba

Due: Short Paper 3 (Privacy)

TBD

T 10/16   Ethics and Data Security

Philip Brey, "Ethical Aspects of Information Security and Privacy" (pp. 21-28)

TH 10/18   Film

No reading

T 10/23   Critically Approaching Data Analysis: WTF is Data?

Rob Kitchin, "Conceptualising Data"

Lisa Gitelman and Virginia Jackson, "Raw Data is an Oxymoron: Introduction" (skim pp. 1-12)

TH 10/25   The Aura of Big Data

danah boyd and Kate Crawford, "Critical Questions for Big Data" (pp. 662-666)

Blaise Agüera y Arcas, Margaret Mitchell, and Alexander Todorov, "Physiognomy's New Clothes" https://medium.com/@blaisea/physiognomys-new-clothes-f2d4b59fdd6a

T 10/30   ***Conceptualizing Bias and Discrimination***

Batya Friedman and Helen Nissenbaum, "Bias in Computer Systems" (esp. pp. 330-336)

TH 11/1   ***Bias and Big Data***

Jonas Lerman, "Big Data and its Exclusions" https://www.stanfordlawreview.org/online/privacy-and-big-data-big-data-and-its-exclusions/

Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, "Machine Bias" https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing

T 11/6   ***Algorithms, Part 1: Harmful Connections***

Due: Case Study 1

Tarleton Gillespie, "The Relevance of Algorithms" (read pp. 167-169, 179-182)

Safiya Umoja Noble, "Missed Connections: What Search Engines Say About Women"

Mike Ananny, "The Curious Connection Between Apps for Gay Men and Sex Offenders" http://www.theatlantic.com/technology/archive/2011/04/the-curious-connection-between-apps-for-gay-men-and-sex-offenders/237340/

TH 11/8   ***Algorithms, Part 2: Profiling and Scoring***

Anton Vedder, "KDD: The Challenge to Individualism"

Lori Andrews, "Facebook is Using You" https://www.nytimes.com/2012/02/05/opinion/sunday/facebook-is-using-you.html

Frank Pasquale, "Digital Reputation in an Era of Runaway Data" (skim)

T 11/13   ***Algorithms, Part 3: Transparency and Accountability***

Julia Angwin, "Make Algorithms Accountable" https://www.nytimes.com/2016/08/01/opinion/make-algorithms-accountable.html

Nicholas Diakopoulos and Sorelle Friedler, "How to Hold Algorithms Accountable" https://www.technologyreview.com/s/602933/how-to-hold-algorithms-accountable/

TH 11/15   ***Check-in/Buffer Day***

<mark>*Due: Case Study 2*</mark>

TBD

T 11/20   ***Thanksgiving***

No class

TH 11/22   ***Thanksgiving***

No class

T 11/27   ***Designing for Good, Part 1: Think Big***

Philip Brey, "The Strategic Role of Technology in a Good Society"

TH 11/29   ***Designing for Good, Part 2: Think Small***

Batya Friedman, Peter H. Kahn, Jr., and Alan Borning, "Value Sensitive Design and Information Systems" (pp. 1-4 and *one* of the three case studies)

Recommended: Watch Jeroen van den Hoven's "Value Sensitive Design Part 1" (https://www.youtube.com/watch?v=xPycWEu9fKU) and "Value Sensitive Design Part 2" (https://www.youtube.com/watch?v=RwuxLIpNRXc)

T 12/4   ***Designing for Good, Part 3: Be Creative***

"Building Consentful Tech" zine

Finn Brunton and Helen Nissenbaum, *Obfuscation: A User's Guide for Privacy and Protest* (read pp. 1-4, skim pp. 7-42)

Look around https://adnauseam.io

TH 12/6   ***Wrap-up, Last Day!***

<mark>*Due: Final Project, if submitting for extra credit*</mark>