

Ethics of Emerging Technologies

Spring 2024

Room
Course

Tepper 2613
70334



**Carnegie
Mellon
University**

Instructor

Dr. Derek Leben (he/him)

I say it: “Lee-ben.”

I can be addressed as “Professor Leben,” “Dr. Leben,” or “Derek”

Email

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Office Location & Hours

Tepper 4120; MW 10am-12pm
and by appointment.

*My working hours are 9am-6pm
on weekdays.*

Course Description

New technologies transform the ways that companies deliver value to consumers, but they also raise important ethical challenges. We will examine these challenges with the goal of developing strong normative arguments for responsible corporate policies around design and deployment. The course is divided into four units: (1) biometric and behavioral data collection, (2) social media and marketing, (3) autonomous objects and AI, and (4) biotech.

Learning Objectives

The goal of the course is to gain an understanding of the ethical challenges raised by new technologies in business, and to develop skills for criticizing and defending corporate policy about the use of these technologies.

We are defining a “policy” as a statement about the conditions under which your company believes it is permissible to deploy some new technology, and the conditions under which it is *not* permissible to deploy that technology, in as much detail as possible.

Textbook

There is no textbook, all readings will be articles posted on Canvas

Requirements

- Attendance (5%)
- Group Presentation (15%)
- Quizzes (20%)
- Paper 1 (30%)
- Paper 2 (30%)

Detailed Requirements

Attendance

During each class, you will mark your attendance on a physical piece of paper with a physical writing device. Each student has exactly two “free” absences. This means that there should be no need to contact the instructor with excuses for absences, unless it is with a record of a *legitimate reason* (see below) which requires more than two absences.

Quizzes

There will be four quizzes. You will be asked to define key terms and answer multiple-choice questions about positions and arguments.

Group Presentations

On the last week of each unit, two teams will present a roughly 20-minute evaluation of a case-study. By the Friday before the last week, the teams will post a 1-paragraph summary of their policy and the argument they will present for that policy. Students are expected to come to class with at least one objection, and teams will also be partially evaluated on their responses.

Aside from the 1-paragraph summary, there is no other written work submitted for the presentation assignment.

Teams should use the lectures and readings from that section to support their case. PPT slides are recommended. The rubric for the presentation is available on Canvas.

Papers

The paper assignments and rubric are available on Canvas. Any standard formatting and citation styles are acceptable.

Paper 1 is due 11:59pm on 2/28

Paper 2 is due 11:59pm on 4/24

The papers are NOT group assignments, they are individual assignments. You may not use the work of others in writing your paper, it must be completed by yourself.

You are welcome to meet with me to go over drafts. I do not schedule meetings on evenings, weekends, or the paper due date. The rubric for the papers is available on Canvas.

Evaluation

Scoring

The scoring system in this class is:

89.5-100% = A

79.5-89.49% = B

and so on...

Late Penalties and Make-Ups

Papers will be penalized with a deduction of 3 percentage points per day late. There is a maximum lateness deduction of 50 percentage points. I will accept work turned in by the end of the semester for the maximum lateness penalty.

Missed presentations and quizzes cannot be made up. If you are unable to present or take the quiz on the required day, please see me ahead of time and we can almost certainly find a solution.

Legitimate Reasons for Absence

Medical, legal, or other serious obligations which override your obligations as a student. Travel for personal or family plans is not a legitimate reason, nor is adding classes for next semester. Job or medical school interviews are legitimate. As a CMU student, you have agreed to be present for all classes in the regular term, including those before vacation periods, and you must make personal or family plans around your class schedule.

Academic Integrity:

You are responsible for reading and understanding the Academic Integrity Guidelines in the Student Handbook. The optional readings and SEP entries should contain all of the materials you will need, and you should also consult the CMU libraries as well as your instructor if any further materials are needed. Below are some specific interpretations of these guidelines which are relevant for this course.

Plagiarism and Improper Use:

In this course, plagiarism is a deliberate attempt to submit another person's words or ideas as your own. As such, it constitutes deception. We do employ the "Turn it in" function on Canvas to screen every paper for plagiarism. If there is material from another source presented without proper acknowledgment, we will evaluate the case based on factors like:

Was the material cited, but just improperly acknowledged?

Was this material from an official text in the course, or from outside material?

How much material was copied/used?

Depending on the severity of the offense, the following penalties may be applicable, along with an official Academic Integrity Violation report:

Small grade penalty (e.g., half a letter grade), Moderate grade penalty (e.g., up to a letter grade), Regrade with elimination of the copied material, Grade penalty and regrade with elimination of the copied material, Grade of 0 on the paper, Grade of 'R' in the course

Cheating

In this course, cheating is the use of outside material (including the work of other students) on a quiz. No quiz in this course may make use of any material during the quiz itself. Cheating on quizzes will depend on the severity of the case. Taking attendance for another student is also an instance of cheating.

The Use of Generative AI

The use of generative AI as a research tool for finding references and information is an improper use of materials. Models trained on data from the Internet are not the same as search engines, and will often “hallucinate,” or fabricate, information that is presented as true.

The use of generative AI for producing *the content or words* of a paper, even a single sentence, is plagiarism. Turning in work which has been written by another agent, either human or machine, without acknowledging proper authorship, is always a violation of academic integrity.

It is permissible to use generative AI as inspiration, the way you might look at the papers of another student as inspiration. But you should treat any content generated by AI the same way you would treat the content generated by other students in the class. You may also engage with AI models in mock debates the way you would with other students, challenging it to present objections and criticisms of the arguments which you have written.

Accommodations

Students with Disabilities

If you have a disability and have an accommodations letter from the Disability Resources office, I encourage you to discuss your accommodations and needs with me as early in the semester as possible. I will work with you to ensure that accommodations are provided as appropriate. If you suspect that you may have a disability and would benefit from accommodations but are not yet registered with the Office of Disability Resources, I encourage you to contact them at access@andrew.cmu.edu.

Student Wellness Resources

As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. CMU services are available, and treatment does work. You can learn more about confidential mental health services available on campus at: <http://www.cmu.edu/counseling/>. Support is always available (24/7) from Counseling and Psychological Services (CaPS): 412-268-2922. If you or someone you know is feeling suicidal or in danger of self-harm, call someone immediately, day or night: CaPS: 412-268-2922; Re:solve Crisis Network: 888-796-8226. If the situation is life threatening, call the police: CMU Police: 412-268-2323; Off campus: 911

Diversity, Equity, Inclusion

The university encourages anyone who experiences or observes unfair or hostile treatment on the basis of identity to speak out for justice and support, within the moment of the incident or after the incident has passed. Anyone can share these experiences using the following resources:

Center for Student Diversity and Inclusion: csdi@andrew.cmu.edu, (412) 268-2150

Report-It (Links to an external site.) online anonymous reporting platform: net (Links to an external site.) username: tartans password: plaid

All reports will be documented and deliberated to determine if there should be any following actions. Regardless of incident type, the university will use all shared experiences to transform our campus climate to be more equitable and just.

Course Schedule

Week	Topic	Reading	Dates
Week 1	Ethics, Business, and Tech		1/17
Week 2	New Resources: Data Ownership & Consent	<p>“Big Data’s End Run Around Anonymity and Consent” Barocas and Nissenbaum</p> <p>“The Ethical Application of Biometric Facial Recognition” Smith and Miller</p> <p>Generative AI Has an Intellectual Property Problem (2023) Appel, Neelbauer, and Schweidel</p> <p>SEP: “Property and Ownership” https://plato.stanford.edu/entries/property/</p>	1/22, 1/24
Week 3	New Resources: Privacy and Surveillance	<p>“The GDPR in the Age of Surveillance Capitalism” Andrew and Baker</p> <p>“Understanding Privacy Online: Development of a Social Contract Approach to Privacy” Martin</p> <p>“Verizon Very Excited That It Can Track Everything Phone Users Do And Sell That To Whoever Is Interested” Kashmir Hill</p> <p>“Google Will Know I’m Pregnant Before I Do” Shadwell</p> <p>SEP: “Privacy and IT” https://plato.stanford.edu/entries/it-privacy/</p>	1/29, 1/31
Week 4	U1 Presentations		2/5, 2/7

Week	Topic	Reading	Dates
Week 5	New Platforms and Media: Manipulation and Deception	<p>“Online Manipulation” Susser et al.</p> <p>“Digital Manipulation and Mental Integrity” Keeling and Burr</p> <p>Progressive Pricing: The Ethical Case for Price Personalization Corker and Izaret</p> <p>SEP: Manipulation https://plato.stanford.edu/entries/ethics-manipulation/</p>	2/12, 2/14
Week 6	New Platforms and Media: Transformative Impacts on mental health and social institutions	<p>“Facebook’s Dangerous Experiment on Teen Girls” AND “Yes, Social Media Really is Undermining Democracy” Haidt</p> <p>“Facebook’s Ethical Problems Are Not Accidental; They Are Part of the Business Model” Lauer</p> <p>Can we Create a Moral Metaverse? Laurie Clarke</p> <p>Selling visibility-boosts on dating apps: a problematic practice? de Vries</p>	2/19, 2/21
Week 7	U2 Presentations		2/26, 2/28
Week 8	SPRING BREAK		

Week	Topic	Reading	Dates
Week 9	AI: Interpretability & Explainability	<p>“Is Explainable AI Intrinsically Valuable?” Colander</p> <p>“Beyond Explainability: Justifiability and Contestability of Algorithmic Decision Systems” Henin and Lemetayer</p> <p>“Explainable AI as Evidence of Fair Decisions” Leben</p>	3/11, 3/13
Week 10	AI: Benefit & Harm	<p>“Ethical and Social Risk of Harm from Large Language Models” (2021) Laura Weidinger et al.</p> <p>“Measuring Automated Vehicle Safety” RAND Corporation</p> <p>“Artificial Intelligence and Machine Learning in Financial Services” <i>Financial Stability Board</i></p>	3/18, 3/20
Week 11	AI: Discrimination & Fairness	<p>“Discrimination in the Age of Algorithms” (2019) Jon Kleinberg, et al.</p> <p>“Do the Ends Justify the Means? Variation in the Distributive and Procedural Fairness of Machine Learning Algorithms” Morse et al.</p> <p>Chapter 1: Measuring Fairness <i>Fairness for AI</i> (2024) Leben</p> <p>SEP: Discrimination https://plato.stanford.edu/entries/discrimination/</p>	3/25, 3/27
Week 12	U3 Presentations & Panel		4/1, 4/3

Week	Topic	Reading	Dates
Week 13	Biotech: Genetic and Neural Engineering	<p>“The Case Against Perfection” Sandel</p> <p>“Genetic Interventions and the Ethics of Enhancement of Human Beings” Savulescu</p> <p>“An Introduction to the Ethical Issues in Genetically Modified Foods” McLean</p> <p>The ethics of biosafety considerations in gain-of-function research resulting in the creation of potential pandemic pathogens Evans, Lipsitch, and Levinson</p> <p>SEP: “Enhancement” https://plato.stanford.edu/entries/enhancement/</p>	4/8
Week 14	Biotech: New Hardware and New Impacts	<p>“The Ethics of Brain-Computer Interfaces” Drew</p> <p>“Who Will Be Liable for Medical Malpractice in the Future? How the Use of Artificial Intelligence in Medicine Will Shape Medical Tort Law” Schweikart</p>	4/15, 4/17
Week 15	U4 Presentations		4/22, 4/24