

Ethics of Data Science

Fall 2024

Professor

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Office hours: MW 4:30-5:30 pm, or by appt.

Meeting Details

Days: MW
Time: 3:30 – 4:20 pm
Place: Wetherill Lab of Chemistry 172
Course: PHIL 208

Teaching Assistants (TAs)

Name	Email	Office Hours	Office Location
Sedong Seo	seo123@purdue.edu	Mon. (10am – 12pm)	Schleman Hall 410
Paul Wheatley	pwheatle@purdue.edu	Tues. (1pm – 2pm)	Schleman Hall 406

Course Description

Technologies based on data collection and processing now permeate our lives and we barely notice. They're used in social media to keep us doom-scrolling, in online shopping to keep us buying, in email to keep our inboxes spam-free, in dating apps, YouTube, Netflix, Spotify, Waze, policing, criminal sentencing, job application screening, job performance assessment, medical diagnoses, credit score ratings, facial recognition, traffic signals, and so much more. This data revolution happened so quickly and quietly that we've barely had time to reflect on its nature, scope, and (dis)value. Thus, a host of pressing moral questions confront us. Among the many we'll consider in this course are: How might data technology transform our world for unimaginable good? How might it lead to catastrophe? How can data tech be used to capture our attention and engagement? What obligations (if any) do we have to resist such attempts? Should governments attempt to regulate the use of data technology (e.g., ban TikTok!), and if so, how? How might militaries, governments, and employers use it in surveillance? How might data tech reveal our own biases and moral failings, and what (if anything) can be done to mitigate this? Will data tech lead to mass unemployment, and if so, what should be done for those left jobless? Finally, what obligations might the enormous impact of data technologies place on those developing these technologies? By the end of the course, students will have acquired some of the tools necessary for grappling with these questions, developing their own views, and defending those views with reasons and arguments.

Required Texts

All required texts are available on the course Brightspace site. You don't need to buy any books.

Course Requirements	Weighting	Where will it be assessed?
• Participation	10%	Based on semester performance in recitation
• Ethical Theory Quiz	10%	True/False quiz taken during recitation
• 2-questions	15%	Submitted on Brightspace before each lecture
• Midterm Exam 1 (Fri., Oct. 11)	20%	Blue Book exam taken during recitation
• Midterm Exam 2 (Fri., Nov. 8)	20%	Blue Book exam taken during recitation
• Final Exam (TBD, finals week)	25%	Blue Book exam taken during exam week

Attendance

Attendance is required for both lectures and recitation sections. You should make sure your teaching assistant (TA) records your presence at each lecture and recitation section you attend. You are allowed three (3) absences total (lectures and recitation sections combined) without notice and without penalty. You don't need to email your TA or me if you are going to be absent. Each absence beyond those three will result in a two-point deduction from your participation grade. These three absences are yours to use at your discretion—use them wisely.

Grading Scale

A: 94 – 100	A-: 90 – 93	B+: 87 – 89	B: 84 – 86	B-: 80 – 83	C+: 77 – 79
C: 74 – 76	C-: 70 – 73	D+: 67 – 69	D: 64 – 66	D-: 60 – 63	F: < 60

Office Hours & Accessibility

I'm happy to meet with you during my office hours to discuss course assignments, course material, or philosophy generally. So is your TA. I've listed our office hours and locations at the top of page one of this syllabus. If those times don't work, email me or your TA to set up an appointment. Zoom works, too.

I'm committed to making class fully accessible regardless of disabilities. If I can do anything to help make the class more accessible to you, let me know, or (if you would prefer) have the Accessibility Office contact me on your behalf.

Participation

Participation begins by *carefully reading the assigned readings before the lecture/recitation*. You'll then need to contribute to class discussion in recitation, at some point, by asking questions or making comments. Some people are shy. I get that. Shy people can either rack up their participation points in the back half of the semester (once they become more comfortable with the recitation class setting), or by coming to office hours (either mine or your TA's), or by chatting with me or your TA about course material over email or after class. Making lots of comments in recitation is not the only (or even best) way to receive a high participation grade. Quality matters, too. The best thing to do is strike a nice balance between quality and quantity. Sometimes you'll say stuff that doesn't quite make sense. That's totally fine. Philosophy is hard. You're allowed to struggle. Feel free to contribute even if you're not 100% sure what's happening. There's no penalty for making a good-faith effort but not quite getting it right. That's how you learn literally anything—trying and failing until you get it.

2 Questions

There will be an assigned reading for each lecture. For each reading, you are required to turn in two (2) questions on Brightspace *before that lecture begins*. Brightspace will lock the assignment as soon as the lecture begins. Thus, you will typically turn in four (4) questions per week about the course readings. You'll turn in two (2) questions on Monday and two (2) more on Wednesday.

Each question you ask should be derived from the assigned text. You should include in your question a quote or citation of a page indicating to your TA what part of the text prompted your question or which part of the text you wish to ask about. If you do not do this, you will not receive full credit for the assignment. So, your questions will generally begin with something like, “[The author] says x on page y . I'm wondering z .” They can't both be clarificatory questions—

requests to explain what this author is saying (though these are good questions, and you should ask clarificatory questions when you need to ask them). At least one question must be something other than a clarificatory question—e.g., an objection to an author’s claim or argument, a question about the broader application of a point the author makes in the text, pointing out an ambiguity, a question about the coherence of various claims the author makes, or something else. (Do your best the first few weeks. Your TA will offer more guidance in recitation sections.)

The Two-Questions assignment is intended to achieve at least four goals: (1) incentivize you to read carefully, (2) provide some accountability for doing the reading, (3) get you prepared to participate in recitation, and (4) legitimately answer your questions.

Since the assignment is, in part, intended to check that you’ve done the assigned reading, **you should do your best to convince me (or your TA) in your question that you have, in fact, read carefully.** This kind of question is not convincing: “What would consequentialists think about our duties to our families?” That question doesn’t demonstrate that you’ve done the reading. First, there is no quote or page citation. I have no idea what part of the text prompted your question. Second, anyone who hasn’t done the assigned reading could ask that kind of question.

Here’s a way to ask that same question that *would* demonstrate to me (or your TA) that you’ve read the assigned reading carefully. You could ask it like this: “Would consequentialists condemn parents giving birthday presents to their children? I can see why they might since, on page x, Shafer-Landau claims that consequentialism requires us to *maximize* good consequences. And often the money parents spend on birthday presents could be used to bring about better consequences elsewhere (e.g., by giving it to charity). On the other hand, on page y, Shafer-Landau claims that consequentialism is highly attractive because it accommodates many of our common-sense moral judgments. It seems common sense that parents are morally permitted to buy birthday gifts for their kids. If that’s right, then it seems consequentialists should be fine with parents giving birthday gifts to their kids. So, my question is: What would consequentialists say about this? Is it morally OK, according to consequentialism, for parents to buy birthday gifts for their kids instead of giving the money to charity?”

Use of AI Chatbots

You are not permitted to use AI or chatbots (e.g., ChatGPT, Gemini, Claude, Quillbot) **in any capacity to complete class assignments**—not even Grammarly. You will take your three exams in person during your recitation section. (If you must be absent, you can arrange with your TA an alternative time to take your exam under their supervision.) You will answer exam questions by hand (with a pen or pencil) in a [Blue Book](#) that you purchase and bring to your recitation section on exam day. You may not use AI or chatbots for your 2-questions. I want *you* to ask the questions.

There are plenty of tools your TA and I can use to check submissions for AI use. As of right now, no tool is perfect on its own. But, by using many different tools and aggregating their judgments, we can get exceedingly good evidence about whether you used AI to complete your assignment. Moreover, the AI-detection software will only get better as time goes on. It won’t be long before college administrators can quickly check every writing assignment you ever submit in college for AI use. It will then be exceedingly easy to see if/when you cheated. Believe me, I understand the appeal of using chatbots to finish college assignments. **But (I’m speaking now, not as your college professor, but as someone who wants your life to go well) my sincere advice to you is: don’t risk it. In an effort to save yourself a few hours of misery (which I completely understand), you may end up ruining your life. I don’t want that for you.** I’m not trying to scare you. I’m trying to help you.

Course Schedule

The Ethical Toolbox

Week 1	Aug. 19	What's Data Science? What's Ethics? How will this class work?
	Aug. 21	Shafer-Landau, "Consequentialism"
Week 2	Aug. 26	Shafer-Landau, "Kantian Ethics"
	Aug. 28	YouTube: The Era of Blind Faith in Big Data Must End Weapons of Math Destruction (Chapter 1: What is a Model?)

The Big Picture

Week 3	Sep. 2	Labor Day (no class)
	Sep. 4	Fazelpour, "Algorithmic Bias: Senses, Sources, Solutions"

Online Advertising

Week 4	Sep. 9	YouTube: Online Advertising YouTube: How TikTok's Algorithm Figures You Out Weapons of Math Destruction , (Chapter 4: Online Advertising)
	Sep. 11	YouTube: How Recommender Systems Work Milano, "Recommender Systems and Their Ethical Challenges"

Predictive Policing

Week 5	Sep. 16	YouTube: How Cops Are Using Algorithms to Predict Crimes O'Neil, <i>Weapons of Math Destruction</i> , (Chapter 5: Justice in the Age of Big Data)
	Sep. 18	YouTube: Does Predictive Policing Make Us Safer? Purves, "Fairness in Algorithmic Policing"

Criminal Sentencing

Week 6	Sep. 23	YouTube: The Dangerous Math Used to Predict Criminals Bagaric, "Enhancing the Integrity of the Sentencing Process through the Use of Artificial Intelligence"
	Sep. 25	Castro, "What's Wrong with Machine Bias?"

The Attention Economy

Week 7	Sep. 30	YouTube: The Attention Economy: How they Addict Us Castro & Aylsworth, "Is There a Duty to Be a Digital Minimalist?"
	Oct. 2	Castro & Pham, "Is the Attention Economy Noxious?"

Evaluating Resumés and Job Performance

Week 8	Oct. 7	Fall Break (no class)
	Oct. 9	YouTube: How AI is Deciding Who Gets Hired O’Neil, <i>Weapons of Math Destruction</i> , (Chapters 6 & 7: On the Job)

Social Media, Misinformation, and Polarization

Week 9	Oct. 14	Ngyuen, “Escape the Echo Chamber”
	Oct. 16	Ngyuen, “How Twitter Gamifies Communication”

Autonomous Vehicles

Week 10	Oct. 21	Assignment: Take the Moral Machines Questionnaire YouTube: Are We Ready for Driverless Cars? Nyholm, “The Ethics of Accident-Algorithms for Self-Driving Cars: An Applied Trolley Problem?”
	Oct. 23	YouTube: The Ethical Dilemma of Self-Driving Cars Berkey, “Autonomous Vehicles, Business Ethics, & Risk Distribution”

Autonomous Weapons

Week 11	Oct. 28	YouTube: Autonomous Weapons (BBC) Robillard, “The Ethics of Weaponized AI”
	Oct. 30	Muller “Autonomous Killer Robots Are Probably Good News”

Catastrophic Risk

Week 12	Nov. 4	YouTube: The Godfather of AI Warns of Catastrophic Risk Bales, “Artificial Intelligence: Arguments for Catastrophic Risk”
	Nov. 6	Bostrom, “The Control Problem”

Artificial Intelligence and the Future of Work

Week 13	Nov. 11	YouTube: Will Automation Take All Our Jobs Away? Danaher, “Will Life Be Worth Living in a World Without Work?”
	Nov. 13	YouTube: Humans Need Not Apply John Tasioulas, “Work and Play in the Shadow of AI”

Descriptive Data Science Ethics: Why do We do Bad Stuff?

Week 14	Nov. 18	Milgram, “The Perils of Obedience”
	Nov. 20	Bazerman and Tenbrunsel, “Ethical Breakdowns”

Week 15	Nov. 25	Joseph Heath, "Business Ethics and Moral Motivation: A Criminological Perspective"
	Nov. 27	Thanksgiving Break (no class)
Week 16	Dec. 2	To be determined
	Dec. 4	To be determined