PHIL_V 336: Big Data, Artificial Intelligence, and Ethics

Course Description and Aims:

Companies like Amazon, Google, Meta Facebook/Instagram, TikTok, as well as banks, phone companies, insurers, and the government collect staggering amounts of data about everyone. And data scientists are getting ever more sophisticated in analyzing and using it. This creates massive opportunities for both financial gain and social good. It also creates dangers such as privacy violations, discrimination, and threats to self-determination and collective, democratic determination. In the wake of the big data revolution, "artificial intelligence" (AI) has the potential to radically transform society and the economy by changing the workplace, warfare, education, and social trust in information. This course introduces students to the legal, policy, and ethical dimensions of big data, algorithmic decision-making, and AI.

We will understand "big data" to refer to the large-scale collection and analysis of data about people and events via electronic collection mechanisms, such as transaction records, electronic archives, internet resources, cell-phone and other electronic appliance tracking, and government records, for making predictions and hypotheses about individual and group conduct. We will understand AI to refer to algorithmic decision-making based on observations of past records of activity and simulations of various activities, for the sake of aiding in human decision-making or as a tool to make decisions for us. At present, AI relies on very large artificial "neural networks" that detect patterns in data and simulate life-like responses to it. There is substantial overlap between these two topics given that AI is often "trained" by analyzing data collected at a mass scale; however, "big data" has been employed for several decades now, while wide-spread use of AI in commerce and everyday life is a relatively recent phenomena.

Learning Outcomes

Through readings (classical and contemporary, drawn from both academia and popular media), class discussion, and case studies, students will:

(1) Develop a basic vocabulary for discussing the ethical dimensions of data science and artificial intelligence and their applications
(2) Analyze issues and policies concerning "big data" and AI technologies through the application of ethical concepts
(3) Critique public policies, social practices, and social institutions that shape, and are shaped by, scientific discovery and technological design
(4) Discern the structure of arguments, represent them fairly and clearly, and evaluate them for cogency.
(5) Formulate original arguments, anticipate objections, and respond in a conscientious fashion.
(6) Read and discuss complex philosophical texts from both historical sources and contemporary works.
(7) Write and speak clearly and persuasively about abstract and conceptually elusive matters.

Prerequisites

This course is intended to be accessible to students with minimal or no formal philosophy background. Students who have had an introduction to philosophical ethics (PHIL_V 100, 102, 230, or 235) will likely find some discussions easier than those without such background, but this is not required. Also, some familiarity with data analysis, computer programming, and/or statistical decision-making would be advantageous, but is not required.

Exclusions

This course may not be taken for credit if a student has already received credit for CPSC_V 430.

Course format

The course will be lecture based, but with significant opportunities for students to talk in small groups, and to participate in large-group discussion. Lectures will be tied to issues raised by readings and occasional videos. Students will sometimes be asked to engage in in-class activities with results to be shared via Canvas or Mentimeter, or similar software.

Sample activities might include:

- Making an argument for or against regulating businesses in their collection and sharing of customer data.
- Investigating an AI program to determine its propensity to "hallucinate."
- Showing students how to use tools from Google or Facebook to explore how much data these platforms currently have collected about themselves.
- Constructing a hypothetical "influence operation" using AI, deep fakes, social media, and data analysis to alter the outcome of an upcoming election.
- Querying an AI program to elicit its tendency to produce results biased by sex, race, or other categories prone to be subject to discrimination based on stereotypes.
- Engage with the MIT "Morality Machine," and describe their own algorithm for autonomous vehicle decision-making in cases of stark trade-offs.
- Write and perform a short dramatic scene about how work will be different if/when AI becomes ubiquitous in the workplace.

Assessment

This course will ask students to demonstrate knowledge of the course materials and achieve the learning objectives through in-class quizzes and exams, and will give students a chance to develop a video or audio recorded presentation on a topic of their choice, which will be shared with others in the course.

Grades will be determined as follows:

Two mid-term examinations (each about 30 minutes in length). Exams will include short answer questions and several (2-4) short essays; sample prompts for the essays will be provided in advance. Students have will write the exam in class either using Canvas's Quiz tool via a Lock-down browser, or traditional hand-written exam:

15% x 2 = 30%.
(Learning objectives 1, 2, 4, 6, 7)

In-class impromptu exercises ("quizzes") based on the day's assigned readings. Exercises will last about 5 minutes, consist of one or two open-ended questions, requiring a sentence or two to answer, and are designed to elicit basic familiarity with key points in the day's reading assignment, as well as provide an incentive to attend regularly. There will be 6 opportunities of which the best 4 scores count: 5% x 4 = 20%
(Learning objectives 1, 4, 6, 7)

One audio or audio/visual recorded project, on a subject of the student's choosing (5-6 minutes in length) (See description below): 20%
(Learning objectives 3, 5, 6, 7)

Final Exam. Final exam will be comprehensive, consisting of 3-5 essay questions, chosen from a larger set of questions provided to the students 2 weeks before the exam. Students will write the exam in person either using Canvas's Quiz tool via a Lock-down browser, or traditional hand-written exam booklets; students may bring one page of typed notes to the exam; otherwise it is closed book, closed notes: 30%
(Learning objectives 2, 4, 5, 6, 7)

The UBC standard grading scale is as follows:

Percentage (%)	Letter Grade
90-100	A+
85-89	A
80-84	A-
76-79	B+
72-75	B
68-71	B-
64-67	C+
60-63	C
55-59	C-
50-54	D
0-49	F (fail)

Faculties, departments and schools reserve the right to scale grades in order to maintain equity among sections and conformity to university, faculty, department or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department or school. Grades are not official until they appear on a student's academic record. See https://vancouver.calendar.ubc.ca/campus-wide-policies-and-regulations/grading-practices/introduction .

The instructor hopes to be able to determine overall scores for the course by simply adding the scores from the individual components, but I reserve the right to scale the final scores for the same reasons mentioned in the Academic Calendar. (Please consult Canvas for a record of your

grades.)

Audio/video project

One course requirement in the assessment section above is to produce a short (5-6 minute) audio or audio/visual presentation, in a format similar to that of a radio-magazine essay (such as heard on CBC's "The Current" or NPR's "RadioLab"), podcast episode (e.g. "Stuff You Should Know" podcast) or You-Tube channel instructional/educational video (e.g., "TED talks", "TED-ed" videos). Students should come up with a topic related to one or more major course themes; engage with at least one philosophical text from the syllabus; write a script, essay, or dialog suited for oral presentation (and possibly a video recording at the student's choosing); and make an audio or audio/visual recording of themselves or another reader/performer speaking. Students are welcome to add creative elements (visuals, sound effects, animations, etc.) to their recorded projects, though doing so is not required; such creative elements will count toward the creativity of the project, but creativity may also be demonstrated by choice of a unique topic, a novel approach to discussing or illustrating it, or bringing original analysis and insight to it. Projects will be made available to all students to see, but will be graded by the instructor/TAs, based on structure/thoughtfulness/clarity of presentation (40%); depth/insightfulness of research/analysis (40%); creativity/originality of the content and presentation (20%). Students will also be required to submit at the due date for the project a short description (up to 250 words) explaining their choices of media for the project, and how it aligns with their topic. (These descriptions will be used to help assess the abovementioned components of the project.) For guidance on how to add technology more sophisticated than just doing an audio recording, visit https://beyondtext.arts.ubc.ca/student-resources/

Attendance

The Academic Calendar says: "Regular attendance is expected of students in all their classes (including lectures, laboratories, tutorials, seminars, etc.). Students who neglect their academic work and assignments may be excluded from the final examinations. Students who are unavoidably absent because of illness or disability should report to their instructors on return to classes." See https://vancouver.calendar.ubc.ca/campus-wide-policies-and-regulations/attendance

Illness and AbsenceI recommend that you attempt to find at least one, perhaps several fellow students who you can communicate with in case of missed classes, so that you can get notes and other relevant information from them in case you are unable to attend class.

If you miss marked coursework for the first time (assignment, exam, presentation, participation in class) and the course is still in-progress, immediately submit a Student Self-Declaration to me so that your in-term concession case can be evaluated.

If this is not the first time you have requested concession or classes are over, fill out Arts Academic Advising's online academic concession form immediately, so that an advisor can evaluate your concession case.

If you are a student in a different Faculty, please consult your Faculty's webpage on academic concession, and then contact me where appropriate.

Regular attendance is expected. It will be very difficult to do well in this course if you do not

make use of readings and the discussions.

Classroom Policy

In this course we will cover a number of topics, issues, and real world events that may have affected the personal lives of students taking this course and the teachers teaching it. While it is important that we be able to freely pursue an academic inquiry into these issues it is equally important we be attentive and sensitive to the different ways people might be affected by these issues and by our study of them. As a student it is your right to bring your personal and lived experiences to your studies in this course. It is also your duty to be respectful of other people's experiences, no matter how different they are from your own. At its best the study of philosophy is collaborative, constructive, and respectful of individuality. I hope that throughout this course we will all do our best to embody these norms.

Academic honesty

I take academic honesty very seriously, as it is essential both to your ability to get full value from this course, as well as for treating fairly those who do their own work. I strongly encourage you to work together in reading and discussing the material, and thinking about the writing of your papers. Nonetheless, your work on the papers and other assignments must be your own work. Cheating, copying, plagiarism, and other forms of academic dishonesty (including assisting others in dishonest activity) will be punished to the fullest extent provided for by the University. If you are unclear on what counts as honest or dishonest methods, you should read the Faculty of Arts' pamphlet on plagiarism (https://wiki.ubc.ca/Learning_Commons:Chapman_Learning_Commons/Academic_Integrity) as well as the University's policy on academic misconduct (https://vancouver.calendar.ubc.ca/campus-wide-policies-and-regulations/student-conduct-and-discipline/discipline-academic-misconduct), and ask me specific questions about what is and isn't allowed in this course. I will not think worse of you for wanting to be clear about this. I will, however, be vigilant in hindering, uncovering and punishing those who fail to take this warning seriously.

In this course you will be required to submit your papers in electronic form. I may elect to submit the anonymized text of your paper to a service to which UBC subscribes, called TurnItIn. This is a service that checks textual material for originality. It is increasingly used in North American universities.

As you may have heard about or even played with Chat GPT or other Generative AI programs already, I say the following regarding its use for this course: do not use it for purposes of completing assignments for this course (this applies principally to writing your script/essay/dialog for your recorded presentation, though see qualification in next section). The value of a course like this is largely in giving you practice in reading, thinking, and writing; Chat GPT, etc., will not help with any of those skills, and so will defeat the point of taking a class like this. And depending on how it is used, it may count as academic misconduct, since using it without giving it due credit is a form of academic dishonesty. See https://academicintegrity.ubc.ca/chatgpt-faq/ and https://genai.ubc.ca/guidance/teaching-learning-guidelines/ .

Policy On The Use Of A.I. (chatGPT etc.)

You ARE permitted to use A.I. for your writing of the script for your recorded presentation as an EDITING TOOL only! Some people find this software helpful especially when writing in a second language, and this kind of usage is fine. If you do use A.I. please indicate in a note accompanying your recorded submission how you used it as part of this project.

Please DO NOT use A.I. to GENERATE the text of your script, or for any of the quizzes or examinations.

Equity and special arrangements

I take seriously the importance of making sure all students are given equal and full opportunities to participate and learn. The University accommodates students with disabilities who have registered with the Centre for Accessibility. Academic accommodations help students with a disability or ongoing medical condition overcome challenges that may affect their academic success. Students requiring academic accommodations must register with the Centre for Accessibility. The Centre will determine that student's eligibility for accommodations in accordance with Policy LR7: Academic Accommodation for Students with Disabilities. Academic accommodations are not determined by your instructors, and I will not ask you about the nature of your disability or ongoing medical condition, or request copies of your disability documentation. However, I may consult with the Centre for Accessibility should the accommodations affect the essential learning outcomes of a course.

The University accommodates students whose religious obligations conflict with attendance, submitting assignments, or completing scheduled tests and examinations. Please let me know as soon as possible, preferably in the first week of class, if you will require any accommodation on these grounds. Students who plan to be absent for varsity athletics, family obligations, or other similar commitments, cannot assume they will be accommodated, and should discuss their commitments with me before the drop date.

If you require any particular arrangements in the classroom to facilitate your participation or learning, please let me know, and I will do what we can to make things suitable for you.

If you encounter serious health or personal difficulties during the term, please let me know of these at your earliest opportunity. There are lots of things more important in life than this class, and when one of those things goes wrong, this class should not add to the burdens you may then confront. Within reason, I will do what we can to work around any genuine, serious difficulties you may confront, but it will be helpful to know of them as soon as you are able to notify me.

The UBC-V Senate Policy V-130 mandates the inclusion of the following paragraph on course syllabuses:

> UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available here: https://senate.ubc.ca/policiesresources-support-student-success .

Draft Schedule of Topics, Readings, and Activities:

Following is a draft schedule for 12 weeks of content, plus a short review of the course material in week 13. This course could be offered as 3 50-minute sessions/week or two 80 minute sessions/week. Underlined titles are clickable links to UBC Library resources (may require login with CWL), or publicly available online sources.

Week	Topic	Readings	Evaluation
1	Introduction: What is big data What is philosophy Ethics overview	McKinsey Global Institute, "Big Data: The Next Frontier for Innovation, Competition, and Productivity" Russell and Norvig, *Artificial Intelligence: A Modern Approach* (4th ed.), 2021, pp. 1-35. IBM, "What is a neural network?"	
2	Overview of western ethical theories Ethics of big data overview	Mill, *Utilitarianism* (brief excerpts) Kant, *Groundwork of the Metaphysics of Morals* (brief excerpts) Floridi and Taddeo, "What is Data Ethics?" *Philosophical transactions - Royal Society. Mathematical, Physical and Engineering Sciences*, Dec. 2016, pp. 1-5. Mittelstadt et al., "The Ethics of Algorithms: Mapping the Debate," *Big Data & Society*, November 2016, pp. 1-21 Johnson, "Ethics of Big Data in Higher Education," *International Review of Information Ethics*, July, 2014, pp. 3-10.	

Week	Topic	Readings	Evaluation
3	Algorithms and Biases	Mill, *On Liberty* ch. 2 (brief excerpts) O'Neil: "The era of blind faith in big data must end" (TED Talk video) Zuiderveen Borgesius: "Discrimination, AI, and Algorithmic Decision-Making" publication of the Directorate General of Democracy, Council of Europe, 2018, pp. 15-31 Angwin et al., "Machine Bias" online article from Pro Publica. Johnson, "Algorithmic Bias: On the Implicit Bias of Social Technology" *Synthese*, 2021, pp. 9941–9961	
4	Big Data and Epistemology, Feminism	Kitchin, "Big Data, New Epistemologies, and Paradigm Shifts", *Big Data & Society*, 2014, pp. 1-12. Klein and D'Ignazio, "Data Feminism for AI" arXiv, May, 2024, pp. 1-22	
5	Privacy and Big Data	Nissenbaum, "A Contextual Approach to Privacy Online," *Daedalus*, 2011, pp. 32-48. Nissenbaum, "The Meaning of Anonymity in and Information Age," *The Information Society*, 1999, pp. 141-144. Hull, "Successful Failure: What Foucault Can Teach Us about Privacy Self-Management in a World of Facebook and Big Data," *Ethics and Information Technology*, 2015, pp. 89–101.	
6	Big Data in Health Care	Topol, "Can AI Catch What Doctors Miss?" (TED talk video) Price and Cohen, "Privacy in the Age of Medical Big Data" *Nature: Medicine*, Jan 2019, pp. 37-43. Mainz et al., "Two Reasons for Subjecting Medical AI Systems to Lower Standards than Humans," *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*, 06/2023, pp. 44-49.	Midterm 1

Week	Topic	Readings	Evaluation
7	Surveillance and Individual Freedom	Harris, "How a Handful of Tech Companies Control Billions of Minds a Day" (TED Talk video) Zuboff, "Big Other: Surveillance Capitalism and the Prospect of an Information Civilization," *Journal of Information Technology*, 2015, pp. 75–89. Harari, "Liberty" from *21 Lessons for the Twenty-first Century*, pp. 57-88. Wu et al., "The Slow Violence of Surveillance Capitalism," *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*, 06/2023, pp. 1826-1837.	
8	Property, Work, and Technology	Susskind: "3 myths about the future of work (and why they're not true)" (TED talk video) Knell and Ruther, "Artificial Intelligence, Superefficiency, and the End of Work: A Humanistic Perspective on Meaning in Life," *AI and Ethics*, 2024, pp. 363–373. Goetze, "AI Art is Theft: Labour, Extraction, and Exploitation: Or, On the Dangers of Stochastic Pollocks," arXiv, May 2024, pp. 1-18.	
9	AI, Democracy, and Freedom	Locke, *Second Treatise of Government* (brief excerpts) Kreps and Kriner: "How AI Threatens Democracy," *Journal of Democracy*, October, 2023, pp. 122-131. Coeckelbergh, "Democracy, epistemic agency, and AI: political epistemology in times of artificial intelligence," *AI and Ethics*, 2023, pp. 1341-1350. Hvistendahl, "You are a Number" (*Wired* Magazine article)	
10	Social Media and Individual Responsibility for technological social change	Rosenthal (SFU Philosophy Dept.), "Losing Privacy and Living the Soundbite Life" (unpublished MS), pp.1-15. Aylsworth and Castro, "Is there a Duty to be a Digital Minimalist?" *Journal of Applied Philosophy*, Aug. 2021, pp. 662-673.	Midterm 2

Week	Topic	Readings	Evaluation
11	AI and autonomous machine decision-making	Bonnefon et al: "The Social Dilemma of Autonomous Vehicles" *Science*, June, 2016, pp. 1573-1576. Lin, "Why Ethics Matter for Autonomous Cars," *Autonomes Fahren*, 2015, pp. 69-85. Santoni de Sio and van den Hoven, "Meaningful Human Control over Autonomous Systems: A Philosophical Account," *Frontiers in Robotics and AI*, Feb. 2018, p. 1-14 Himmelreich, "Never Mind the Trolley: The Ethics of Autonomous Vehicles in Mundane Situations," *Ethical Theory and Moral Practice*, 2018, pp. 669-684.	
12	Superintelligence/AI out-of-control	Yudkowsky, "Shut it Down" (*Time* Magazine opinion column) Davidson, "The Dangers of Runaway AI," *Journal of Democracy*, October, 2023, pp. 132-140. Chalmers, "The Singularity, a Philosophical Analysis" (Unpublished Manuscript), pp. 1-56. Chan et al., "Harms from Increasingly Agentic Algorithmic Systems" *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*, 06/2023, pp. 651-666.	Recorded audio/video projects due.
13	Course Wrap-up		

Land Acknowledgement

UBC's Point Grey Campus is located on the traditional, ancestral, occupied, and unceded territory of the xʷməθkʷəy̓əm (Musqueam) people. I acknowledge the land rights of the Musqueam people, who for millennia have passed their culture, history, and traditions from one generation to the next on this site.