Ethics, Data, and Technology (PHI 3861)
Fall 2021

Class meeting times and places:

Lecture: Monday and Wednesday | Period 6 (12:50 pm – 1:40 pm) in LIT 0101
Discussion for 25760: Friday Period 3 (9:35 am – 10:25 am) in MAT 0112
Discussion for 25761: Friday Period 4 (10:40 am – 11:30 am) in MAT 0105
Discussion for 25762: Friday Period 6 (12:50 pm – 1:40 pm) in WEIL 0238

Instructor: Duncan Purves
    Contact: dpurves@ufl.edu
    Office hours: Wednesday (2:00 pm – 3:30 pm online and by appointment) in Griffin-Floyd Hall, rm. 332 (Masking required)

Teaching Assistant: Schuyler Sturm
    Contact: tsturm@ufl.edu
    Office hours: Tuesday (10:00 am – 1:00 pm) in Griffin-Floyd Hall, rm. 316

COURSE DESCRIPTION
This course exposes students to important interactions between ethics, contemporary data science, and emerging social issues. Students will grapple with foundational concepts in ethics and data science. The course begins with a brief introduction to ethical issues in data science. The course then pairs theoretical discussions of ethics with concrete issues in emerging technologies. Discussion topics include racial bias in machine learning, the black box problem for machine learning, mass surveillance and privacy, technological unemployment, and moral responsibility for autonomous weapons systems.

COURSE OBJECTIVES
1. Identify and explain the philosophical dimensions of foundational concepts in data science and machine learning including bias, fairness, opacity, privacy, and consent.

2. Develop a basic vocabulary for discussing the ethical dimensions of data science and big data technologies.

3. Evaluate contemporary uses of data-driven systems through the application of ethical concepts.

4. Discern the structure of arguments, representing them fairly and clearly, and evaluating them for cogency.

6. Formulate original arguments, anticipate objections, and respond in a conscientious fashion.

7. Read and discuss complex texts from contemporary work in philosophy, law, and information and data science.

8. Speak and write clearly and persuasively about abstract and conceptually elusive matters.

GRADING SCALE

The following grade scale will be used to assign final letter grades for the course. See UF grading policies for assigning grade points at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

Grade Scale	Grade Value
100-93=A	A=4.0
92-90=A-	A-=3.67
89-86=B+	B+=3.33
85-82=B	B=3.00
81-79=B-	B-=2.67
78-76=C+	C+=2.33
75-72=C	C=2.00
71-69=C-	C-=1.67
68-66=D+	D+=1.33
65-62=D	D=1.00
61-60=D-	D-=0.67
59-0=E	E=0.00

Grades that fall exactly on the upper threshold are awarded the higher grade. See https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx for more information about UF grading policies.

COURSE WEBSITE

This course is supplemented by online content in the e-Learning environment known as "Canvas." PDF readings, an electronic copy of the syllabus, and assignment submission portals can be found on the course website. To login to the e-Learning site for this course, go to https://lss.at.ufl.edu/, click the **e-Learning in Canvas** button, and on the next page enter your Gatorlink username and password. You can then access the course e-Learning environment by selecting PHI 3861 from the **Courses** pull-down menu at the top of the page. If you encounter any difficulties logging in or accessing any of the course content, contact the UF Computing Help Desk at (352) 392-4537 or http://helpdesk.ufl.edu. Do not contact the course instructor regarding computer issues (Simply because I am unlikely to be of any help!).

REQUIRED READINGS

All readings can be found on Canvas (ufl.instructure.edu) under the 'Files' tab.

COURSE REQUIREMENTS

Emerging technology case studies (500 pts): We will have six or seven in-class discussions of case studies concerning emerging technologies **(See the case study dates on the course schedule)**. Students will be assigned to discussion groups. Each group member will provide a written analysis of the case study and will use this analysis to inform the discussion. Each group will submit the "best" written analysis at the end of the discussion. Grades for the case studies will be determined by (a) participation in the case study discussion and (b) the quality of the group's submitted written analysis. See the Course Schedule for the dates of the case studies.

Short Paper (200 pts): (1200 – 1500 words), **due 11/29** This short paper involves a critical assessment of a topic that we have discussed in class. I will give you a choice of two topics for this paper; I will also provide the structure that the paper must follow. One of the topics will be theoretical, addressing an argument for a particular position in ethical theory. The other topic will involve *applying* ethical concepts in order to assess a specific technology.

This paper assesses whether students have acquired:
- skill in discerning the structure of arguments, representing them fairly and clearly, and evaluating them for cogency.
- skill in formulating original arguments, anticipating objections, and responding in a conscientious fashion.
- skill in reading and discussing complex philosophical texts from both historical sources and contemporary works
- and skill in speaking and writing clearly and persuasively about abstract and conceptually elusive matters.

Short quizzes (200 pts): There will be regular quizzes, designed to make sure that students are understanding the readings and to check retention of the lecture material.

Critical Discussion Questions (100 pts): A good philosophy course requires good discussion. Good discussion requires showing up to class having thought carefully about the concepts and arguments presented in the readings. To promote this, the remaining 10% of the course grade will be determined by your submitting a critical discussion question **before every Monday's class**. To receive full credit, **you must also attend class** to be able raise that discussion question in the classroom.

Note: A 10% deduction from your final grade may also occur for transgressions such as disruptive behavior, falling asleep, sending text messages, or surfing the internet. I never expect to need to enforce this.

ADDITIONAL INFORMATION

Academic Honesty
See http://www.dso.ufl.edu/studentguide/studentrights.php and http://www.registrar.ufl.edu/catalog/policies/students.html#honesty. You should expect the minimum penalty for academic dishonesty to be a grade of E for the class (not just the assignment). All incidents of academic dishonesty will be reported to Student Judicial Affairs. Repeat offenders may be penalized by suspension or expulsion from the university.

All sources and assistance used in preparing your papers and presentations must be precisely and explicitly acknowledged. The web creates special risks here. Cutting and pasting even a few words from a web page or paraphrasing material without a reference constitutes plagiarism. If you are not sure how to refer to something you find on the internet, you can always give the URL.

Students with Disabilities
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Classroom Conduct
Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

Technology
Laptop and cellphone use is prohibited in this class. Turn off your phone as soon as you enter the classroom. First-time violations will receive a verbal warning. Subsequent violations will yield a loss of participation points. Though I see the irony in prohibiting technology in a class on the ethics of technology, there are reasons for this: (1) students tend to misuse their laptops; (2) students learn worse on laptops, even when they use them the "right" way. Either way, students who use laptops seem to receive worse grades than those who use paper and pen.*

*If you think that you really do need to use a laptop in this class, come speak to me. I will post my lecture notes soon after each class period, so don't worry about missing some notes.

Attendance, Illness, Religious Holidays, and Twelve Day Rule

Requirements for class attendance, religious holidays, and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Excerpt from the statement on absences:

> *Absences count from the first class meeting. In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays, and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved.***

**If you think you have an acceptable reason to be excused for your absence, you must contact the Dean of Students Office to receive an excuse letter. This prevents me from having to make difficult discriminations between excuses, and it provides you with something you can use for all of your missed classes.

Course evaluation process
"Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/."

Counseling and wellness/Emergencies
http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575;
The University Police Department: 392-1111 or 9-1-1 for emergencies.

Email
The best way to reach me or Schuyler is by email (dpurves@ufl.edu and tsturm@ufl.edu). Although we typically check my email numerous times per day, you shouldn't expect us to reply to an email before the next business day. In particular, please plan ahead if you have questions before major assignments are due. We are happy to answer whatever questions you have over email, so long as they are the kinds of questions that can be answered in just a few sentences. We prefer that you ask more involved questions during our office hours.

*I will occasionally email the class list with important information, like changes in the reading, discussion questions, or modifications for assignments. Therefore, please check your email regularly.

Syllabus statement concerning [Florida House Bill 233](#)
The Intellectual and Viewpoint Diversity Act became law effective July 1, 2021. According to the provisions of this law, students are **authorized to record**, for specified purposes, video or audio of class lectures at Florida's public institutions of higher education but are **prohibited from publishing** a recorded class lecture without the lecturer's consent. Furthermore, faculty research, lectures, writings, and commentary, whether published or unpublished, are protected expressive rights. Any person injured by the unauthorized publishing of a recorded class lecture can seek **civil remedy including injunctive relief and damages**.

Syllabus statement concerning COVID-19
In response to COVID-19, the following practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.
- If you are not vaccinated, and are capable of doing so, **get vaccinated**. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: https://coronavirus.ufhealth.org/vaccinations/vaccine-availability/. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.

- You are expected to **wear approved face coverings at all times** during class and within buildings even if you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.
    - Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
    - Hand sanitizing stations will be located in every classroom.

- **If you are sick, stay home and self-quarantine**. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
    - Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.
    - If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.

- Continue to regularly visit coronavirus.UFHealth.org and coronavirus.ufl.edu for up-to-date information about COVID-19 and vaccination.

COURSE SCHEDULE (subject to change)

Date	Topic	Reading
Week 1 *Mon., 8/23*	***Introductions, syllabus, Technology and Society***	Introductions/Syllabus/Discussion of ProPublica's Machine Bias
Wed., 8/25	***Technology and Society***	Langdon Winner, "Technologies as Forms of Life"
Week 2		
Mon., 8/30	***Technology and Society: In Sickness and in Health***	Emmanuel Mesthene, "The Role of Technology in Society"
Wed., 9/1	***Understanding Ethics***	Boonin, "AI Book Manuscript" (1 – 19) Recommended: Shelley Kagan (1998) "Preliminaries" (1 – 22)
Week 3		
Mon., 9/6	**Labor Day Holiday**	**NO CLASS**
Wed., 9/8	***Machine Bias***	Tech Crunch: "Racial Bias Observed in Hate Speech Detection Algorithm" Batya Friedman and Helen Nissenbaum (1996). "Bias in Computer Systems" ACM Transactions on Information Systems, Vol. 14, No. 3, July 1996, Pages 330 –347.
Week 4 *Mon., 9/13*	***Machine Bias***	*Angwin et al, "Machine Bias," ProPublica* Sam Corbett-Davies et al (2016). "A computer algorithm used for bail and sentencing decisions was labeled biased against blacks. It's actually not that clear," Corbett-Davies et al, Washington Post

Wed., 9/15	***Machine Bias***	Selections from Clinton Castro (2019). "What's wrong with machine bias?" *Ergo* 6(15).
Week 5		
Mon., 9/20	***Machine Bias***	Reading TBD
Wed., 9/22	***Bias Mitigation Techniques***	**Guest lecture**: Kiana Alikhademi, UF Computer and Information Science and Engineering Department Reading: TBD
Week 6		
Mon., 9/27	*Case Study:* ***Machine Bias in Predictive Policing***	Selections from Boonin, "AI Book Manuscript" (25 – 42): Predictive Policing and the Problem of Bias
Wed., 9/29	***Machine learning and the "Black Box Problem"***	Boonin, "AI Book Manuscript" (117 – 137): Risk Assessment Tools and the Black Box Problem Recommended: Burrell, "How the machine 'thinks': Understanding opacity in machine learning algorithms" Recommended: Neural Networks (YouTube tutorial series)
Week 7		
Mon., 10/4	***What's wrong with the black box?***	Kate Vredenburgh, "Is there a right to explanation?"
Wed., 10/6	***What's wrong with the black box?***	Boonin, "AI Book Manuscript" (137 – 167): Embracing the Black Box
Week 8		
Mon., 10/11	***What's wrong with the black box?***	Boonin: Embracing the Black Box cont'd

Wed., 10/13	*Case Study: **Intellectual property rights v. the right to explanation***	**Possible Zoom visit by David Boonin, University of Colorado Department of Philosophy**
Week 9		
Mon., 10/18	***The "Attention Economy"***	Clinton Castro and Adam Pham, "Is the attention economy noxious?" *Philosopher's Imprint* 20(17)
Wed., 10/20	*Case study: **Facebook, democracy, and the attention economy***	Russian content on Facebook, Google and Twitter reached far more users than companies first disclosed (WashPo) Why Fake News Spreads like Wildfire on Facebook (Chicago Tribune)
Week 10 *Mon., 10/25*	***Automation and Work*** ***The Machine v. the Laborer***	"Humans Need not Apply" Marx, *Capital*, ch. 15, sections 5 and 6 Lenman, "On becoming redundant or what computers shouldn't do"
Wed., 10/27	***Computer automation and the meaning of life***	John Danaher (2017). "Will Life Be Worth Living in a World Without Work? Technological Unemployment and the Meaning of Life." *Sci Eng Ethics* 23, 41–64.
Week 11 *Mon., 11/1*	**Case Study: Technological Unemployment**	"Robots could replace 1.7 million American truckers in the next decade" (LA Times) Rewatch: "Humans Need not Apply" Vardi, "What the industrial revolution really tells us about the future of automation and work" (The Conversation)
Wed., 11/3	The Ethics of Autonomous Weapons	Recommended: "Attack of the Killer Robots" (Buzzfeed) Robert Sparrow, "Killer Robots"

Week 12		
Mon., 11/8	**The Ethics of Autonomous Weapons**	Boonin, "AI Book Manuscript" (186 – 225): Rejecting the Responsibility Gap Argument
Wed., 11/10	**Killing by Machine: The Ethics of Autonomous Weapons**	Purves, Jenkins, Strawser, "Autonomous Weapons, Moral Judgment, and Acting for the Right Reasons"
Week 13		
Mon., 11/15	**Government surveillance and privacy**	Screening of *Citizenfour* "Here's everything we know about PRISM to date" (WashPo) House passes NSA spying bill after Trump tweets cause confusion (Reuters)
Wed., 11/17	**What is privacy?**	Menges, Leonhard. "Did the NSA and GCHQ Diminish Our Privacy? What the Control Account Should Say" *Moral Philosophy and Politics*, vol. 7, no. 1, 2020, pp. 29-48.
Week 14		
Mon., 11/22	**(Why) Does Privacy Matter?**	Rachels, "Why Privacy is Important" (326 – 331) Moxie Marlinspike, "Why 'I've got nothing to hide' is the Wrong Way to Think about Surveillance Doyle, "Privacy and Perfect Voyeurism"
Wed., 11/24	**Thanksgiving Holiday**	**No CLASS**
Week 15	*Contemporary trends in privacy protection* **Short Paper Due**	**Guest Lecture**: Vanessa Frost , UF Computer and Information Science and Engineering Reading: TBD

Mon., 11/29		
Wed., 12/1	Case Study: [Surreptitious Surveillance on the Internet](#)	Read Case Study details, including embedded links [Google's 'Project Nightingale' Gathers Personal Health Data on Millions of Americans (WSJ)](#)
Week 16		
Mon., 12/6	TBD	TBD
Wed., 12/8	TBD	TBD