

COSC 4931/5931/6931: SOCIAL AND ETHICAL IMPLICATIONS OF DATA

Fall 2018

Instructor:	Shion Guha	Time:	Th 6:30pm - 9:10pm
Email:	shion.guha@marquette.edu	Place:	108 Cudahy Hall

Description: An introduction to the ethical and social consequences of collecting, curating and analyzing data in academia, public and private contexts. This course takes a socio-technical stance - imagine this to be a mix of a sociology and computer science course. There will be lots of reading, writing, coding and discussions.

Prerequisites: None. This course is open to everyone from across campus. Some prior proficiency in programming and statistics is useful but not required. I will assume that everyone knows how to search for information online and has access to a computer.

Github: <https://www.shionguha.net/teaching/cosc4931fa18>

Piazza: <https://piazza.com/class/jlblrki6luh196>

Zoom: <https://zoom.us/j/403272429>

Office Hours: Wed 2:00pm - 5:00pm or by appointment

Books: There are no **required** textbooks for this class. Let's all save some money! I will post all recommended books, readings, datasets and code fragments on the course website or the class github repo as we progress through the course. You are expected to come to class everyday having read the relevant readings for that day. Class participation and collaboration is key to success in this course.

Code Policy: If and when necessary, we will use the Python + Jupyter notebook platform for all code. Everyone is required to have a [github](#) account to upload and synchronize all code necessary for the class project and other activities.

Objectives: This course is a gentle introduction to the effects, implications and consequences of data as seen through a socio-technical lens with a special focus on ethics. At the end of the course, a successful student should be able to:

- understand the potential (un)desired and (un)expected outcomes of data, algorithms and computational models,
- be proficient in (de)constructing and interrogating algorithms for bias,
- understand the principles of fairness, transparency and accountability of algorithms,
- critically visualize and write about the social and ethical implications of algorithms in daily living.

Timeline:

- aug 30: introduction to the course; policies and expectations;
- sep 6: what is data? what problem are we addressing?
- sep 13: algorithmic biases and exclusion; how do machines discriminate?

- sep 20: auditing algorithms for bias and discrimination
- sep 27: formalizing and enforcing algorithmic fairness
- oct 4: algorithmic transparency and due process
- oct 11: interpretability in machine learning and explainable AI
- oct 17: **mid term paper due!**
- oct 25: computing for development
- nov 1: computing for marginalized populations
- nov 8: data privacy, security and trust
- nov 15: research ethics in data science
- nov 29: case study: algorithms in the criminal justice system
- dec 6: case study: algorithms in the sharing economy
- dec 15: **final paper due!**

Grading Policy: weekly reading responses (30%), mid term paper submission (20%), final paper submission (20%), class performance (30%). This course will **not** be graded on a curve. The final grades will depend on the following scores:

A: 93 - 100; AB: 85 - 92; B: 77 - 84; BC: 69 - 76; C: 61 - 68; CD: 53 - 60; D: 45 - 52; F: 0 - 44

All regrade requests will be limited to computational errors. I will provide partial credit for particular questions. Please refer to the course policy section for more details.

Course Policy:

- You are responsible for your own progress. Please check your marquette email and piazza for course announcements regularly. We will only use d2l for communicating grades and submitting papers.
- Well be discussing many issues that are controversial and politically sensitive. If youre thinking carefully about the topics in this class, youre likely to disagree at some point with me, with the readings, and/or with your colleagues. These points of tension and disagreement can be the most intellectually productive component of the course! I strongly encourage you to voice your opinions in ways that are (1) respectful of others opinions and (2) well-considered/supported by evidence or experience. Well devote some class time to discussing how to formulate arguments thoughtfully.
- Attendance is a must in this course since a major portion of the grade depends on class performance, weekly reading responses on piazza and the fact that this course is scheduled only one day of the week. If you are registered for the in-class section but are unable to attend any particular week, you may attend via zoom. However, excessive number of absences will be penalized.
- All papers will be submitted online via d2l. All code must be uploaded to personal github accounts and a link must be provided on all d2l submissions. Any submission after the deadline will be considered late and will not be graded.
- You may discuss your papers with other students, but you must write up your papers and code as an individual.
- You must cite every reference in your papers and every library (if used) in your project in [ACM style](#). Failure to do so will be regarded as a violation of academic integrity. Please refer to the section on academic integrity for more details.

- The mid term paper should be in the style of a research paper around 6 pages (excluding references) in the ACM paper style adhering strictly to the [current ACM conference norms](#). It will be due at 11:59 PM local time. I will inform you about the expected content at an appropriate time.
- The final paper should be in the style of a research paper around 10 pages (excluding references) in the ACM paper style adhering strictly to the [current ACM conference norms](#). It will be due at 11:59 PM local time. I will inform you about the expected content at an appropriate time.
- I will take in class attendance on the first day of class and again, just after withdrawal date to get an accurate count of class registration. Otherwise, I will not take attendance regularly.
- Please make sure your cell phone is turned fully off, or silent. No texting, reading emails, playing games, or anything else. I will reserve the right to ask you to leave the class if you are being distracting or disruptive.

Ott Memorial Writing Center: The Ott Memorial Writing Center offers free one-on-one consultations for all writers, working on any project, at any stage of the writing process. Marquette's writing center is a place for all writers who care about their writing, because every writer can benefit from conversation with an interested, knowledgeable peer. Writing center tutors can help you brainstorm ideas, revise a rough draft, or fine-tune a final draft. You can schedule a 30- or 60-minute appointment in advance (288-5542 or www.marquette.edu/writing-center), but walk-ins (in 240 Raynor or our other satellite locations) are also welcome. The Ott Memorial Writing Center also offers free workshops and hosts writing retreats.

Academic Integrity: Marquette University takes academic integrity very seriously. This is a core part of who we are as reflected by our Jesuit values. All students are required to take the [Academic Integrity Tutorial](#). If you haven't, please go take it right now. All students are required to adhere to the [Honor Pledge](#) and follow the Honor Code. Please familiar yourself with the [Academic Integrity](#) website. There is a lot of useful information there.

I take a zero tolerance policy with violations of academic integrity. All papers and projects are run through a plagiarism detection software. If you are flagged, be assured that we will have a conversation. Let's not have that conversation shall we? If I determine that you have indeed violated academic integrity, you will receive a failing grade for that component of the course or for the entire course depending on the nature and severity of the violation. Please help me to make sure that there are no such incidents.

Accessibility Policy: If you have any accessibility needs, please contact [Office of Disability Services](#) (ODS) to register them as soon as possible. ODS works with students with documented disabilities to provide accommodations for their educational needs. The course has been designed for multiple different styles of learning. However, if you have any specific learning styles that you want me to know about which would not be addressed by AES, please reach out to me within the first week of class so I can try to accommodate.