

CSE 490E: Ethics, Society, and Computers

Winter 2018

Time: Tuesday, 230-320

Location: EEB 042

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Office Hours: By appointment only

Description:

This course will explore computing technologies as they pertain to society along ethical dimensions. In particular, it will examine what it means to be an ethical computer scientist and the societal implications of computer technology. Each week, we'll read about a different topic or case study (e.g. privacy) and discuss the related quandaries in class. This course will afford a moment to look up from the minutia of computer science – algorithmic complexity, fitting models, appropriate use of MVC, etc. – to examine the impact of technology on society at large.

Objectives:

This course will provide a space and the impetus for exploration of ethical issues in computer science. The point of this class is not for the dictation of what is ethical (or the contrary), but rather for students to play a role in critically exploring technology. At the end of this course, students will have gained a broader conception of dilemmas in current computing technologies and will have a stronger framework with which to develop their own ethical responsibilities.

Disclaimer:

Many of the topics explored in this class are relevant because of their contentiousness. Students should bring an open mind and a desire to examine perspectives possibly different than their own. It is important that everyone be particularly respectful of each other's positions.

(Some) Questions to Explore:

- Is it sufficient to know that a technology works? What does it mean that it works? What is your obligation to understand this?
- How do ethics pertain to computer science?
- Who is accountable when a technology fails?
- What is our role as developers in shaping debates about technology?

Assignments:

Each week, students are expected to read the assigned article or paper and submit through Canvas a brief response of about one paragraph in length (three to five sentences). These responses should demonstrate understanding of the reading and could entail of the following: a summary of the work, questions, connections to previous readings, critiques, etc. The responses will be graded on a did/ did not do basis.

Grading:

This seminar will be graded credit/ no credit. In order to receive credit, students must submit 7/10 write-ups and attend 7/10 seminars. That said, the point of this course is not a grade. Students should attend because of the readings and discussions, not in spite of them.

Acknowledgements:

Thanks to Dr. Anna Lauren Hoffman for providing source material and guidance for this course.

Schedule:

The following is a tentative schedule for the class.

Week one: Introduction to Ethics

Objective: Get to know each other and establish a safe environment to discuss the topics. Address the importance of ethics in computer science.

Reading:

- Floridi, L. (2010). Ethics After the Information Revolution in *The Cambridge Handbook of Information and Computer Ethics* (pp 1 – 19) New York, NY. Cambridge University Press. (Available on [Google Books](#))
- Council, A. E. (1993). ACM code of ethics and professional conduct. *Communications of the ACM*, 36(2), 99-105. (Skim; Available here: <https://ethics.acm.org/code-of-ethics/>)

Questions:

- Why are we here? What are ethics?
- What are our values?
- What motivates you to take this class? What do you hope to get out of it?

Week two: Accountability in Computer Systems

Objective: Discuss the implications of errors in software through a lens of moral responsibility, legal liability, and accountability. Therac-25 will serve as a case study in how this plays out.

Reading:

- Leveson, N. G., & Turner, C. S. (1993). An investigation of the Therac-25 accidents. *Computer*, 26(7), 18-41. (Skim; Available [here](#))
- Nissenbaum, H. (1996). Accountability in a computerized society. *Science and engineering ethics*, 2(1), 25-42. (Available [here](#))
- Angwin, J. (2016). Make Algorithms Accountable. *The New York Times*. Retrieved from <https://www.nytimes.com/2016/08/01/opinion/make-algorithms-accountable.html>

Optional Reading:

- Tavani, H. T. (2011). *Ethics and technology: Controversies, questions, and strategies for ethical computing*. John Wiley & Sons. (Read chapter 4; available as a pdf on Canvas)

Questions:

- Who's to blame when things go wrong?

Beyond the class:

- Policy implications
- One way to prevent errors in the first place: programming languages research

Week three: Values in Technology

Objective: Examine the degree to which technology has value outside of merely the manner in which it is used.

Reading:

- boyd, d. (2016). Be Careful What You Code For. *Data and Society Points*. Retrieved from <https://points.datasociety.net/be-careful-what-you-code-for-c8e9f3f6f55e>
- Friedman, B., Kahn Jr, P. H., Borning, A., & Hultgren, A. (2013). Value sensitive design and information systems. In *Early engagement and new technologies: Opening up the laboratory* (pp. 55-95). Springer Netherlands. (Available [here](#))

Questions:

- Is technology value neutral?

Beyond the class:

- Groups: Design Use Build (DUB)
- Classes: Human computer Interaction

Week four: Privacy

Objective: Unpack what privacy means and how this relates to our conception of computer systems.

Reading:

- Houmayoun, A. (2017). The Secret Social Media Lives of Teenagers. *The New York Times*. Retrieved from <https://www.nytimes.com/2017/06/07/well/family/the-secret-social-media-lives-of-teenagers.html?mcubz=1>
- Tavani, H. (2012). Privacy and cyberspace. In *Ethics and technology: Controversies, questions, and strategies for ethical computing*, 4th Edition (pp. 131-168). Hoboken, NJ: Wiley. (Skim; available as a pdf on Canvas)

Optional Reading:

- Brey, P. (2007). Ethical aspects of information security and privacy. *Security, privacy, and trust in modern data management*, (pp 21-36). (Available [here](#))
- Rachels, J. (1975). Why privacy is important. *Philosophy & Public Affairs*, 323-333. (Available [here](#))

Questions:

- Do we have a right to privacy?

Beyond the class:

- Electronic Frontier Foundation, Tech Policy Lab

Week five: Conceptions of Data

Objective: Explore, akin to the discussion of value in technology, the neutrality of data and resulting implications.

Reading:

- Garber, M. (2014). Our Numbered Days: The Evolution of the Area Code. *The Atlantic*. Retrieved from <https://www.theatlantic.com/technology/archive/2014/02/our-numbered-days-the-evolution-of-the-area-code/283803/>

Optional Reading:

- Van Dijck, J. (2014). Datafication, dataism and dataveillance: Big Data between scientific paradigm and ideology. *Surveillance & Society*, 12(2), 197. (Available [here](#))

Questions:

- How does our understanding of what is data shape our results?

Beyond the class:

- Organizations: Data and Society
- Debate over the 2020 census

Week six: Algorithmic Bias

Objective: Examine an example of bias resulting from a machine learning algorithm to set up understandings of algorithms as a whole.

Reading:

- Anguin, J. et al. (May, 23, 2016). Machine Bias. *ProPublica*. Retrieved from <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>

Optional:

- Spielkamp, M. (2017). Inspecting Algorithms for Bias. *MIT Technology Review*. Retrieved from <https://www.technologyreview.com/s/607955/inspecting-algorithms-for-bias/>

Questions:

- How does this technology fail those ideas we've examined?
- Should we design systems without knowing what they do?

Week seven: Expression

Objective: Explore the role of technology in allowing and restricting expression and speech, touching on the resulting ethical quandaries.

Reading:

- Malcom, J., Cohn, C., and O'Brien, D. Fighting Neo-Nazis and Freedom of Expression. *Deeplinks*. The Electronic Frontier Foundation. Retrieved from <https://www.eff.org/deeplinks/2017/08/fighting-neo-nazis-future-free-expression>

Questions:

- When should speech be restricted (if ever)?

Week eight: Access to Technology

Objective: Critically examine the perception of designing for a 'normal' user.

Reading:

- Thomas, J. C. (1997). Steps toward universal access with a communications company. In *Human values and the design of computer technology* (pp. 271-287). Center for the Study of Language and Information. (Available as a pdf on Canvas)

Optional Reading:

- Shneiderman, B. (2000). Universal usability. *Communications of the ACM*, 43(5), 84-91. (Available [here](#))

Questions:

- For whom are we designing? To what degree does this limit access?
- How do our ideas of a norm restrict access?

Beyond the class:

- Accessibility seminar, Taskar Center
- Digital divides

Week nine: Ownership and Intellectual Property

Objective: Unpack the meaning of intellectual property and address some concerns in the field.

Reading:

- Burk, D. L. (2001). Copyrightable functions and patentable speech. *Communications of the ACM*, 44(2), 69-75. (Available [here](#))

Optional Reading:

- Lessig, L. (1996). Intellectual property and code. *Journal of Civil Rights and Economic Development*, 11(3), 6. (Available [here](#))
- Jezsik, L. (July 2004). Why are you stealing that software: piracy in South East Asia. *Ubiquity* 2004. Retrieved from <http://dx.doi.org.offcampus.lib.washington.edu/10.1145/1022352.1022353>

Questions:

- What is intellectual property?
- Who benefits? Why do we have IP?
- How can we conceive of piracy?

Beyond the class:

- Courses: Intellectual Property Law for Engineers
- Open Source Software

Week ten: Looking forward

Objective: Reflect on the course and attempt to individually establish a framework for thinking ethically about computer science.

Reading:

- Ago, M. H. (2015, September 27). Are Ethicists an Obstacle to Progress? Retrieved from <http://thephilosophicalsalon.com/are-ethicists-an-obstacle-to-progress/>

Optional Reading:

- Tavani, H. T. (2011). *Ethics and technology: Controversies, questions, and strategies for ethical computing*. John Wiley & Sons. (Read chapter 2; available as a pdf on Canvas)

Questions:

- Where do we go from here? How can we incorporate our understandings of ethics?
- Is a consideration of technology from an ethical lens worthwhile?
- What haven't we covered?

Beyond the class:

- Future classes: HCI, Accessibility, Security
- Groups: Change