

PHILOSOPHY 340: MINDS AND MACHINES
FALL 2020

Professor Eric Swanson, <ericsw@umich.edu>

Office hours at <https://umich.zoom.us/j/4465968858>: Mondays 10–12 and by appointment.

This course will discuss minds, machines, the relationships between them, and the relationships they encourage and discourage. Throughout we will compare and contrast human minds and brains with machine ‘minds’ and ‘brains,’ considering questions like: Could a machine have a mind? Could a machine be conscious, or think in the ways that people do? What can human brains teach us about how a thinking machine might work, and vice versa? What might information processing, information integration, and information availability have to do with consciousness? Could the internet be conscious? How could we tell? How do machines and our interactions with them influence how humans think, learn, reason, and know? What are the promises and perils of artificial intelligence, big data, and gargantuan networks, especially when the underlying mechanics of machine and network reasoning are not transparent to us? How should machines be treated—including machines that exhibit some but not all features of human minds? Why? How should machines treat us?

TEXTS

Mind Design II: Philosophy, Psychology, Artificial Intelligence, edited by John Haugeland.

AI: Its Nature and Future, by Margaret A. Boden.

The Internet of Us: Knowing More and Understanding Less in the Age of Big Data, by Michael Patrick Lynch.

Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy, by Cathy O’Neil.

Frankenstein, or the Modern Prometheus: Annotated for Scientists, Engineers, and Creators of All Kinds, by Mary Shelley, edited by David H. Guston, Ed Finn, and Jason Scott Robert.

The Matrix, directed by Lilly and Lana Wachowski, available through Amazon Prime, Google Play, iTunes, and Youtube.

Lo and Behold: Reveries of the Connected World, directed by Werner Herzog, available through Amazon Prime, Google Play, iTunes, Netflix, and YouTube.

Her, directed by Spike Jonze, available through Amazon Prime, Google Play, iTunes, Netflix, and YouTube.

“Hang the DJ” (*Black Mirror*, season 4), directed by Tim van Patten, available through Netflix.

Other texts and media are available on Canvas: <https://umich.instructure.com/courses/390705>

COURSE WEB SITE

Canvas: <https://umich.instructure.com/courses/390705>

Please use Piazza to ask questions that aren't specific to you! Piazza has really helped my students in the past, especially in this course where everyone has different strengths and areas of expertise. You can sign up through Canvas or at <https://piazza.com/umich/fall2020/phil340001fa2020>

LECTURE

Mondays and Wednesdays 1-2:20, <https://umich.zoom.us/j/99214178219>

If you have connection issues just call: +1 312 626 6799 US (Chicago), Meeting ID: 992 1417 8219

SECTIONS

002, Fridays at 9 with Calum McNamara <camcnam@umich.edu>

003, Fridays at 12 with Calum McNamara <camcnam@umich.edu>

004, Fridays at 2 with Laura Soter <lksoter@umich.edu>

005, Fridays at 12 with Laura Soter <lksoter@umich.edu>

006, Thursdays at 3 with Rebecca Harrison <rebhar@umich.edu>

007, Thursdays at 4 with Rebecca Harrison <rebhar@umich.edu>

GRADING

15% each: three short (two to three page) papers, due 9/20, 10/18, and 11/15

20%: final paper (three to four pages), due 12/15

15%: responses to the *upcoming* reading (or viewing), graded pass / fail, submitted through your *section's* Canvas site. (E.g., your 9/6 reading response will respond to Turing, "Computing Machinery and Intelligence"; your 9/13 reading response will respond to Haugeland, "Computer Architecture.") These don't have to be long—one paragraph which clearly articulates one question or comment is perfect. For a pass your response has to make it *clear* that you did the reading and thought about it. Reading responses are not required for the Sundays on which papers are due, so you have more time for your paper. Late responses will not be accepted, since the GSIs and I use these responses to help us prepare for lecture and sections.

20%: your section grade, including participation in section and lecture, surprise quizzes if necessary, etc. Truly excellent reading responses and answers on Piazza, regularly submitted, will boost your section grade.

EXPECTATIONS

Remember that this syllabus is utterly incomplete. This is because things will change in ways that we can't anticipate. So pay close attention to changes in course policy, announced in lecture and over Canvas.

Keep up with the readings. They demand close attention and careful thought. If you fall behind you'll miss much of what's going on for the rest of the semester.

We'll be discussing controversial issues in this course, and challenging our beliefs throughout. Be polite, respectful, and generous in discussion with your classmates and teachers.

All students are expected to be aware of the College of LSA's standards of academic integrity:

<https://lsa.umich.edu/lsa/academics/academic-integrity.html>
<https://www.lib.umich.edu/academic-integrity>

Read them carefully and email me if you don't understand them fully! We encourage you to discuss the material with your classmates, but all work you turn in must be your own. Cheating or plagiarism will result in a grade of 0 for that assignment and disciplinary action by the University.

If you might need an accommodation for a disability, please let me know at your earliest convenience. Some aspects of this course may be modified to facilitate your participation and progress. As soon as you make me aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD) to help us determine appropriate academic accommodations. SSD (734-763-3000; ssd.umich.edu) typically recommends accommodation through a Verified Individualized Services and Accommodations (VISA) form. Any information you provide is private and confidential.

University of Michigan is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and

<https://caps.umich.edu/>

during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at (734) 764-8320 and

<https://www.uhs.umich.edu/mentalhealthsvcs>

or for alcohol or drug concerns, see

<http://www.uhs.umich.edu/aodresources>

For a listing of other mental health resources available on and off campus, visit:

<http://umich.edu/~mhealth/>

SCHEDULE

Monday 8/31	Organizational meeting
Wednesday 9/2	Marr, "Understanding Complex Information-Processing Systems" (available on Canvas); Haugeland, "What Is Mind Design?" (in <i>Mind Design</i>)
	Labor Day
Wednesday 9/9	Turing, "Computing Machinery and Intelligence" (in <i>Mind Design</i>)
Monday 9/14	Haugeland, "Computer Architecture" (available on Canvas)
Wednesday 9/16	Newell and Simon, "Computer Science as Empirical Inquiry: Symbols and Search" (in <i>Mind Design</i>)
Sunday 9/20	First paper due, 2–3 pages
Monday 9/21	Minsky, "A Framework for Representing Knowledge" (in <i>Mind Design</i>)
Wednesday 9/23	Dreyfus, "From Micro-Worlds to Knowledge Representation: AI at an Impasse" (in <i>Mind Design</i>)
Monday 9/28	<i>Her</i> (directed by Spike Jonze)
Wednesday 9/30	Boden, Chapters 1–2
Monday 10/5	Boden, Chapter 3
Wednesday 10/7	Smolensky, "Connectionist Modeling: Neural Computation / Mental Connections" (in <i>Mind Design</i>)
Monday 10/12	Boden, Chapters 4–5
Wednesday 10/14	Brooks, "Intelligence without Representation" (in <i>Mind Design</i>)
Sunday 10/18	Second paper due, 2–3 pages
Monday 10/19	van Gelder, "Dynamics and Cognition" (in <i>Mind Design</i>)
Wednesday 10/21	Boden, Chapter 6
Monday 10/26	<i>Lo and Behold: Reveries of the Connected World</i> , directed by Werner Herzog
Wednesday 10/28	Lynch, pp. 3–40
Monday 11/2	Lynch, pp. 41–88
Wednesday 11/4	Lynch, pp. 89–154
Monday 11/9	Lynch, pp. 155–188
Wednesday 11/11	O’Neil, Weapons of Math Destruction, pp. 15–31, 50–83
Sunday 11/15	Third paper due, 2–3 pages
Monday 11/16	O’Neil, Weapons of Math Destruction, pp. 84–140
Wednesday 11/18	O’Neil, Weapons of Math Destruction, pp. 179–232
	Thanksgiving Recess
Monday 11/30	Boden, Chapter 7; <i>The Matrix</i> , directed by Lilly and Lana Wachowski
Wednesday 12/2	Shelley, <i>Frankenstein</i>
Monday 12/7	Johnston, "Traumatic Responsibility: Victor Frankenstein as Creator and Casualty"; "Hang the DJ" (<i>Black Mirror</i> Season 4)
Tuesday 12/15	Final paper due