LMC 8803 Special Topics in Digital Media: Thinking Machines (V.4 Aug 28)
Fall 2024
Janet Murray
Wednesdays 3:30-6:15
Meeting in TSRB 322 (PenLab)

This course will focus on cultural ideas about "thinking machines," including cyborgs, and sentient robots, in Anglo-American culture from the definition of the theoretical Turing Machine in 1936 to the advent of chatbots built on Large Language Models in the 2020s. The seminar format will include common readings and individual reports, and areas of emphasis will reflect student interest.

Among the topics likely to be covered are evolving definitions and claims for "Artificial Intelligence," concepts of human beings as machines, chatbots (starting with Eliza) as benchmarks for AI; historical trends in AI from neural nets to symbolic representation and back again; cyborgs and robots as fictional and theoretical beings; attractions and fears of merging with the machine. Texts will include technologists, sociologists, philosophers, and fiction writers such as A. Turing, J. Weizenbaum, I. Asimov, D. Haraway, N. Bostrom, G. Hinton, M. Wells, R. Kurzweil, E. Bender, T. Gebru and some cybernetic roboticists and other surprises.

Notes on course structure: This course meets once a week Wednesdays 3:30-6:15 (with breaks), room to be determined but first meeting in TSRB 322 PeNLab or somewhere nearby. Because it meets once a week on Wednesdays the last meeting will be the week before Thanksgiving, November 20. Students will have an additional 2 weeks to revise their final projects, which could be a research paper or an interactive artifact and design document.

The course is aimed at PhD students in Digital Media but others are welcome with permission of instructor. It is the first time I am offering this course and it overlaps with my next book, currently in progress, current title *Digital Delusions,* so I am brionging a lot of open questions and I will be expecting students to be active collaborators in shaping the content and form of our exploration.

Schedule (to be revised – Canvas will always have latest version)

Week	Date	Topic	Required Texts		Related Texts
1.	8/21	Overview			
2.	8/28		Riskin "Frolicksome Machines"		Descartes Babbage; Lovelace Vannevar Bush

			Long Pre-History of AI		
3.	9/4	Early Fiction	Asimov ; early robots; I Robot 1940s and 1950s cybernetic robots	"Robbie" "Run-Around" "Reason" "Evidence" "	Wiener Grey Walter
4.	9/11	Turing Test and Eliza Effect	Turing, 1950 Weizenbaum, Eliza article, 1966 Play with Eliza emulator		Turing biography Weizenbaum, *Compu Power and Human Re* 1976 (and earlier sho pieces) Google employee sentience alarm NYT reporter convo w ChatGPT Loebner Award controversies and awardees
5.	9/18	Neurons & Machines: Neurons and Symbols	McCarthy et al Dartmouth Summer Proposal Simon & Newell: Heuristic Problem Solving (1958) Articles to come on Perceptron**		McCulloch and Pitt 1 Von Neumann, EDVA Report 1945 Von Neumann, Comp and the Brain 1958 Wiener, Cybernetics (1948 Papert One AI or Two? Sociological analysis Perceptron controver

6.	9/25	Cyborgs 1	Donna Haraway, Cyborg Manifesto		Star Trek Mr. Data Neural Nets v GOFAI Decline of symbolic A knowledge reps Rise of Machine Lear
7.	10/2	Cyborgs 2	1 book from Martha Wells' Murderbots Series		Other books from Murderbots Series Other Sci Fi with Cyb
8.	10/9	Singularity and Virtuality; Simulation hypothesis	Kurzweil excerpt to come Bostrom excerpt to come		Kurzweil, *The Coming Merging of Mind and Machine* Nick Bostrom, *Superintellig* Nick Bostrom, *Are We Living in a Simulation* *Her* (film) Spike Jonze Deep Learning
9.	10/16	2020s	Hinton talk(s) on AI danger Wolfram on how LLMs work		Timnit Gebru, Emily Bender Gary Marcus Melanie Mitchell Rodney Brooks Popular Press
10.	10/23	Research Week			
11.	10/30	Preliminary topics/project design			
12.	11/6	Research interim reports			
13.	11/13	Research interim reports			
14.	11/20 LAST MEETING	Final Reports/Project Presentations			
15.	THANKSGIVING BREAK	No class			
16.	Final week	No Class			

17.	Monday 12/9 5pm	Hand in any final revisions to final project or paper			

Assignments
Weekly written responses to readings and class participation (50 points).
Final Project (50 points) – can be written essay or interactive project.
All assignments are to be handed in to course Canvas site in appropriate week.

Some Special Applications of the Honor Code to Work in this Course
Students may use computer code, story elements, and images produced by others, including by AI generators as part of their work in fulfillment of assignments for this course, if (a) they clearly identify and credit the source of any work not original to them and (b) they point to a substantial part of the assignment that is their own original creation. In the case of AI generators, document any prompts you have written and any edits you have made to the generated material.

In collaborative projects, students should clearly identify who is responsible for each element of the design and implementation. Credits should be assigned by mutual agreement and any dispute about crediting should be brought to the attention of the instructors as soon as possible in the process. Any collaborations beyond the group work explicitly assigned in class must be approved by the instructor in advance.

Please be aware that students will self-assess and mutually assess one another for the final project group assignment.

Communications Center
The Communication Center is located in Clough Commons 447. Trained professional and peer tutors help undergraduate and graduate students with written and oral presentations. You are encouraged to take advantage of this resource in preparing your assignments. They are available for online consultations:
http://www.communicationcenter.gatech.edu/make-appointment

Coping with our High-Stress Culture

The known stresses of academic life can intensify other sources of personal or societal anxiety, and we all get overwhelmed at times. Even though our workloads may be high, it is important to take time to look after ourselves and one another. The beginning of the semester is a good time to think about pacing your work so you don't have to pull all-nighters and you don't get into a cycle of lack of sleep, loss of perspective, and accelerating anxiety. Try to set aside some regular time to escape to something you enjoy for its own sake. Many people find yoga and meditation helpful to getting perspective on life. I am personally a firm believer in the healing power of narrative

which can simultaneously distance us from our everyday world and reveal to us what we most deeply love, hate, and long for. So go read a novel or binge-watch something great – and see if you can get a friend to watch with you or to talk with you about it. It is always a good idea to have a regular exercise routine that is something that you enjoy.

If you are experiencing anxiety or depression or a medical, personal, or family crisis, or if you just feel overwhelmed and unable to cope with the many pressures of being a student at Tech or a human being on this planet at this moment in time, please do not hesitate to reach out for help. Everybody needs help sometimes, and college and graduate school years are often a personally challenging time in ways that can feel frightening and isolating. You are not alone, and many of us – including me -- are available to be sympathetic listeners and to share our own strategies for coping with stressful situations. In addition, professional counselors and medical practitioners have expertise that can be very helpful. The Dean of Students Office has a list of services here: https://studentlife.gatech.edu/services/mental-health-well-being . The **CARE Center** and the **Counseling Center**, Stamps Health Services, and the Dean of Students Office offer both in-person and virtual appointments. Student Center services and operations are available on the **Student Center** website. For more information on these and other student services, contact the Dean of Students or the **Division of Student Life**.

Recordings of Class Sessions and Required Permissions:

Classes may not be recorded by students without the express consent of the instructor unless it is pursuant to an accommodation granted by the Office of Disability services. Class recordings, lectures, presentations, and other materials posted on Canvas are for the sole purpose of educating the students currently enrolled in the course.

Students may not record or share the materials or recordings, including screen capturing or automated bots, unless the instructor gives permission.

- For classes where participation is voluntary, students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded.
- For classes requiring class participation, if students are identifiable by their names, facial images, voices, and/ or comments, written consent must be obtained before sharing the recording with persons outside of currently enrolled students in the class.

Information Related to Covid-19:

- Students are expected to be familiar with and abide by the Institute guidelines, information, and updates related to Covid-19 and to abide by CDC guidelines. https://health.gatech.edu/coronavirus/isolation-quarantine .

- Please note that if you test positive for Covid-19 you should isolate, and if you are exposed to Covid-19 you should mask for 10 days in public indoor spaces like our classroom even if you continue to test negative. Thank you for protecting the instructor and your fellow students.

- Please note that age puts me and my life partner in the high risk category so I am particularly concerned with avoiding exposure to Covid-19 and flu virus.