Critical Approaches to Artificial Intelligence

This course introduces students to the critical study of artificial intelligence, and will equip participants with a fundamental understanding of AI's material, social, and political dynamics. Together we will critically analyze recent Large Language Models (LLMs), in an attempt to discern their true significance: we argue that they constitute the most recent chapter in a long process of labour division, whereby human activity is transformed into logical operations which can be automated or supplemented by a machine. Our wide-ranging discussion will cover the intellectual origins of AI, its underlying scientific principles and relation to industrialization; the division of mental, manual, and mechanical forms of labour; increased computational power, and the energy, equity, and environmental costs of the widespread and unthinking adoption of AI. Drawing from both emerging and canonical literature in science and technology studies, history of science and political philosophy, this course helps students think critically about AI, and serves as a primer to the cultural study of science in society.

Professor(s): Alfred Freeborn, Thomas Turnbull

Grade Breakdown
Midterm essay (2000 words): 30%
Final project (3000 word essay OR practical project + 2000 word essay): 40%
Participation: 30% (15% for weeks 1-7 and 15% for weeks 8-14)

Schedule with Indicative Readings: tbc following course acceptance.

Recommended Preparatory Reading (to be discussed Week 9):

- ➔ Edward, Paul. "How to Read a Book", v5.0, University of Michigan School of Information.
- ➔ Becker, Howard S. *Writing for Social Scientists, Third Edition: How to Start and Finish Your Thesis, Book, or Article*. Chicago, IL: University of Chicago Press, 2020.

05.09.2025 Week 1: Introduction to the History of AI

- ➔ Watch the series of conversations between Professor Simon Schaffer and Paul Sen "Artificial Intelligence: Lessons from History"
- ➔ Read the "Introduction" in Pasquinelli, Matteo. *The Eye of the Master: A Social History of Artificial Intelligence*. London ; New York: Verso Books, 2023.

12.09.25 Week 2: Thinking Machines

- ➔ Schaffer, Simon. "Ok Computer." In *Ecce Cortex: Beiträge Zur Geschichte Des Modernen Gehirns*, edited by Michael Hagner. Wallstein Verlag, 1997.
- ➔ Jones-Imhotep, Edward, "The Ghost Factories: Histories of Automata and Artificial Life", *History and Technology*, 36 (1), 2020: 3-29.

19.09.25 Week 3: Dividing Hand and Mind

- ➔ Kropotkin, Peter. “Brain Work and Manual Work.” *The Nineteenth Century*, March 1890, 456–75.
- ➔ Marx, Karl. “Chapter 15: Machinery and Large-Scale Industry” in *Capital*. 1867, pp. 492-543

Week TBD: AI and Race

- ➔ Amaro, Ramon. “Chapter 1 “As If: Critical Thoughts on Gaining Access to Black Aspiration”, in *The Black Technical Object: On Machine Learning and the Aspiration of Black Being*. London: Sternberg Press, 2023.
- ➔ Watch this talk with the author: https://www.youtube.com/watch?v=p5IAgKOQfFo

26.09.25 Week 4: Mental Mechanics

- ➔ Dupuy, Jean-Pierre. “Chapter 2, “A Poorly Loved Parent” in *On the Origins of Cognitive Science: The Mechanization of the Mind*. A Bradford Book. Cambridge, Mass: MIT Press, 2009.
- ➔ Rosenbleuth, Arturo, Norbert Wiener, Julian Bigelow, “Behavior, Purpose and Teleology”, *Philosophy of Science*, 10 (1), 1943: 18-24.

03.10.25 Week 5: Managing Minds

- ➔ Introduction and Part II of Rose, Nikolas S. *Governing the Soul: The Shaping of the Private Self*. Free Association Books, 1989.

10.10.25 Week 6: When Computers Were Women and AI is Human

- ➔ Grier, David Alan. “Introduction: A Grandmother’s Secret Life”, and “Chapter 18, I Alone Am Left to Tell Thee”, in *When Computers Were Human*. Princeton: Princeton University Press, 2007.
- ➔ Roberts, Sarah. “Your AI is a Human”, in Mullaney, T. et al., *Your Computer is on Fire* (MIT Press, 2021): 51-70.

17.10.25 Week 7: Cybernetics and Neoliberalism

- ➔ Mirowski, Philip. ‘Machine Dreams: Economic Agents as Cyborgs’, *History of Political Economy*, 29 (1998): 13-40.
- ➔ “Chapter 8, Hayek and the Epistemology of Connectionism” in Pasquinelli, Matteo. *The Eye of the Master: A Social History of Artificial Intelligence*. London ; New York: Verso Books, 2023.

-------- Midterm Project Due ------

24.10.25 Week 8: Presentations of Midterm Projects

31.10.25 Week 9: How to Write Your Final Paper

- ➔ Edward, Paul. "How to Read a Book", v5.0, University of Michigan School of Information.
- ➔ [tailored chapters from] Becker, Howard S. *Writing for Social Scientists, Third Edition: How to Start and Finish Your Thesis, Book, or Article*. Chicago, IL: University of Chicago Press, 2020.

07.11.25 Week 10: Mo' Data, Mo' Problems

- ➔ Kantayya, Shalini. *Coded Bias* (2020): Film [Covers material discussed in Amaro, *Black Technical Object*].
- ➔ Timnit Gebru and Émile Torres, "The TESCREAL bundle: Eugenics and the promise of utopia through artificial general intelligence." *First Monday* 29 (4), 2024: https://firstmonday.org/ojs/index.php/fm/article/view/13636

14.11.25 Week 11 Energy and LLMs

- ➔ DeepSeek-AI, "DeepSeek-V3 Technical Report", 2024, *Arxiv.x*: https://arxiv.org/pdf/2412.19437
- ➔ Jevons, William Stanley, Ch. VII. "Of The Economy of Fuel" in *The Coal Question: An Inquiry concerning the Progress of the Nation, an the Probable Exhuastion of our Coal-mines* (Macmillan, London, 1865.
- ➔ Luccioni, Alexandra Sasha, Emma Strubell, Kate Crawford, "From Efficiency Gains to Rebound Effects: The Problem of Jevons' Paradox in AI's Polarized Environmental Debate", 2025, *Arxiv.x*: https://arxiv.org/pdf/2501.16548

21.11.25 Week 12 Workshop with Guest Lecturer (tbc)

28.11.25 Week 13 The Future(s) of Work

- ➔ Vonnegut, Kurt. *Player Piano, A Novel* (1952) [Why not read the whole thing? Or as much as you like]
- ➔ Wang, Xiaowei, "How to feed an AI", in *Blockchain Chicken Farm: and other stories of tech in China's countryside* (Farrar, Strauss and Giroux, 2020).

----- Final Paper Due ------

05.12.25 Week 14 Final Paper Presentations

Additional Material:

- ➔ Noble, David, *Forces of Production: A Social History of Industrial Automation* (OUP, 1984)
- ➔ Ensenmenger, Nathan. "The Environmental History of Computing", *Technology and Culture*, 59(4) 2018: 7-33.