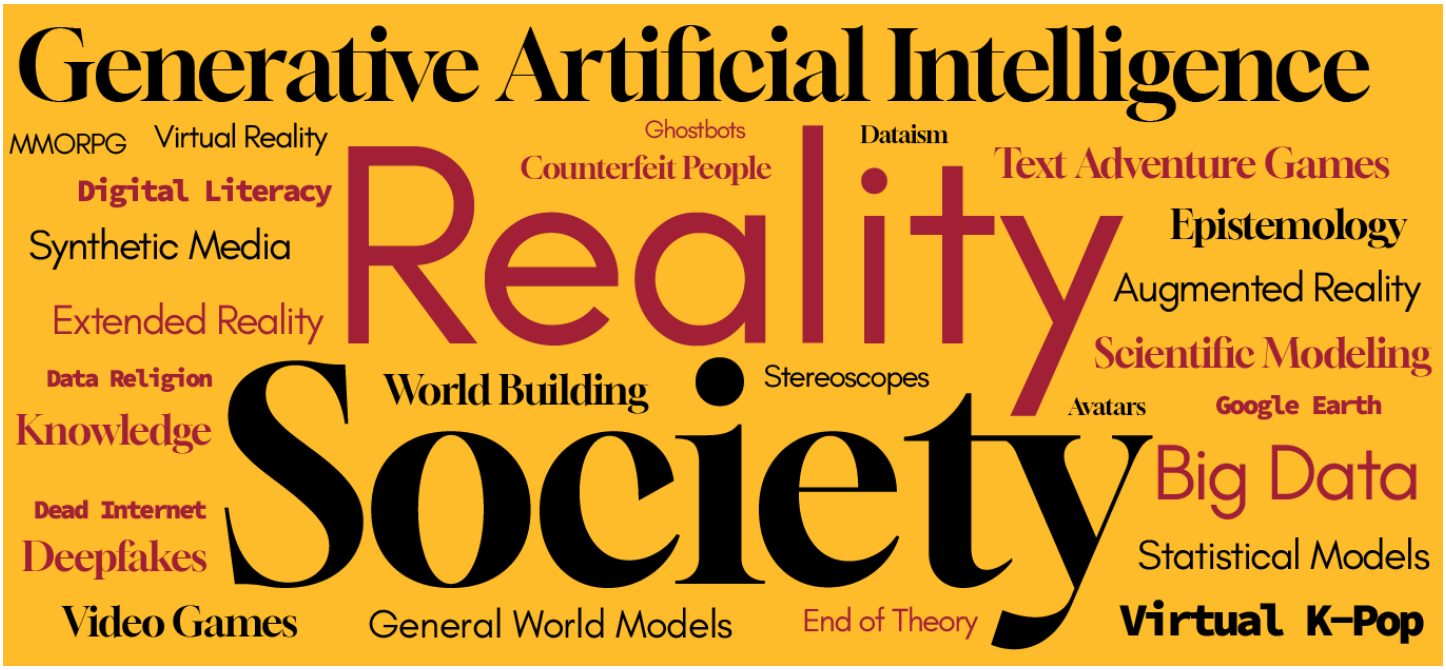

Simulation And Society

CORE 499 (63580)
Spring 2025
2 Units
LVL 301
Thursdays
1:00PM-2:50PM

Dr. Curtis Fletcher
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Office Hours: Thursdays
12:00PM-1:00PM

Some technological developments can appear near totalistic in the way they remake how we think—they permeate everything, including deeply rooted perspectives about knowledge, politics, society, and even reality. Simulation is one such set of technologies. Simulation here refers to a broad range of settings: the temporary virtual reality and gaming environments into which we voluntarily enter; the app-based or online experiences which we increasingly favor over real-world interactions; the artificial, AI-media and bot-dominated online spaces into which we may soon find ourselves; and the fully simulated world in which we may unknowingly live.

To explore these shifts, we will define ‘simulation’ as a system or environment that acts as a simplified surrogate for a more complex real-world counterpart. For example, virtual reality simplifies real environments to provide streamlined visual representations; AI companions mimic human behavior without lived experience; and generative AI predicts patterns in order to simulate language, images, and video without actually understanding meaning or the laws of physics.

This course will provide students with the opportunity to use the technologies of extended reality (XR) and AI-powered simulation as a lens through which to explore the shifting nature of human values, interactions, and attitudes in the early 21st century. In doing so, the course will engage students in a comprehensive, interdisciplinary study of virtual worlds, preparing them to engage with our increasingly simulated digital spaces in critical and informed ways.

Students in the course will also take advantage of technologies available at the Ahmanson Lab with support from the professor and dedicated Lab staff. Students will have the chance to explore and use XR technologies, generative AI tools, bot systems, and a brain-computer interface, gaining knowledge and hands-on experience while engaging with the themes of the course.

Through readings, discussions, and hands-on exploration of relevant technologies, students will engage with the following kinds of questions:

- How have virtual worlds evolved, from their origins in early science fiction, mechanical simulations, stereoscopic technologies, and early film, to the immersive digital environments of today? And how have the altered how we represent reality?
- What philosophical questions are raised by virtual reality and immersive environments, and how does the Simulation Hypothesis challenge our understanding of reality?
- How does the increasing simulation of human behavior through data models affect political and consumer manipulation? What are the implications of the rise of artificial identities and AI-generated content for our sense of authenticity and trust in digital spaces?
- What strategies can we develop to critically navigate and verify information in increasingly automated and simulated digital spaces?

Course Requirements:

Participation (15%): Active participation in discussions is essential in this seminar. As is attendance. In order to effectively participate in discussions students must come prepared by thoughtfully completing reading assignments each week. In addition, students should read the writing assignments of their peers on the weeks when they are due and come to class prepared to discuss other's perspectives.

Writing Assignments (40%): In the final week of each course section, students will write shorter essays (500 words) that synthesize and analyze readings and topics covered throughout that portion of the course. These essays will be posted to the class' website.

Final Project (45%): Students will complete a final project for the course. Projects can take the form of either (a) a longer-form essay (1000 words) on a research topic that relates to the core themes of the course (to be determined in consultation with the professor); or (b) the fabrication of an artifact, system, simulation, or environment that employs one of the technologies explored at the Ahmanson Lab during the class and demonstrates a deep engagement with the course themes (to be determined in consultation with the professor), particularly in how simulation reshapes perceptions of society, knowledge, or reality (this option must be accompanied by a 150-word reflection essay on how the project relates to the course themes).

Course Website:

Over the course of the semester, the class will build a website that features students' research, reflections, and insights on simulation and society. The website, which will consist primarily of the writing assignments and final projects outlined under “Course Requirements” above, will include three sections: a collection of essays and creative projects that document and examine topics related to the history, philosophy, and politics of simulation; an interactive timeline tracing the evolution of simulation technologies and their impact on society; and a series of brief entries providing strategies for critically engaging the growing complexity of simulated and artificial online spaces. Finally, the site will feature ways for readers to meaningfully navigate between these sections, allowing them to move fluidly from larger argument-driven essays to specific moments in a timeline or individual strategies and back again.

The website will provide students with the opportunity to add their own writing to the site as well as to help organize the site, learning and applying critical digital literacy skills by linking various elements of the site into a clear and coherent scholarly information architecture.

To build the website, the class will utilize Scalar, a scholarly authoring and publishing platform developed at the Ahmanson Lab. As one of Scalar's co-creators, the professor will provide expert guidance and will actively build the website alongside students.

Course Outcomes:

By the end of this course, students will be able to:

- Outline the historical development of technologies used to simulate reality and model social and natural aspects the world.

- Critically analyze the impact of simulation technologies on society, culture, politics, knowledge, and reality.

- Understand how technologies shape and are shaped by a wide range of human endeavors, using them as a lens to examine shifts in our thought and behavior.

- Engage thoughtfully in digital spaces, with a heightened awareness for discerning authentic information and identities from increasingly simulated content online.

- Design and develop an online scholarly resource that effectively organizes interdisciplinary research and knowledge.

Course Readings:

All course readings will be provided via accessible links or as PDFs by the professor.

Course Schedule:

Section 1: The Evolution of Simulated Realities

In this section, we will begin our journey into virtual worlds by looking at how and why humans have represented and simulated reality, from early stereoscopes to modern virtual reality. We will also examine the creation of abstract models of reality, focusing on their evolution in video games, design, scientific modeling, and generative artificial intelligence.

January 16. Introduction to the class. We'll go over the syllabus, course objectives, and expectations. We'll also introduce ourselves, get to know each other, and explore the course topic broadly.

January 23. From Stereoscopes to VR: We will look at the history of visual and immersive technologies with a focus on the hardware used to generate representations of the physical world.

Readings:
Introduction + Chapter 1. Bolter, Jay David, Maria Engberg, and Blair MacIntyre. *Reality media: Augmented and virtual reality*. MIT Press, 2021.

Interactive Session:
Students will engage with a variety of prominent VR experiences that feature significant simulations of the real world, such as Google Earth and VRChat.

January 30. From Text-based adventure games to MMORPGs: We will delve into the development of simulations in video games with a focus on world-building and interactive storytelling.

Readings:
Chapters 1-3. Barton, M., & Stacks, S. Dungeons and Desktops: The History of Computer Role-Playing Games. 2008

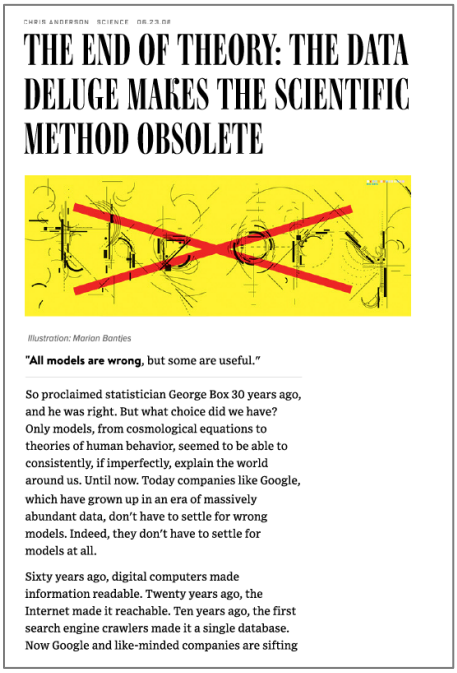
Interactive Session:
Students will play with a host of old video games, from 1970s text-based adventure games to 1990s graphic adventure games.

Website:
Introduction to Scalar: brief tutorials on adding text and media to class site as well as organizing content via linear and non-linear pathways. Initial brainstorming on organizational strategies for website.

February 6. From Reality to Models: We will explore the advancements of complex computer simulations with a focus on modeling in science, engineering, architecture, and design.

Readings:
Chapters 1-2. Turkle, Sherry. “Simulation and Its Discontents.” MIT Press, 2009.

February 13. From Theory to Models. We will examine ideas behind Dataism, and the "end of theory," exploring how the rise of big data and generative AI, particularly Large Language Models and General World Models, represent a shift from deep theoretical understanding of natural and social phenomena to simply simulating and predicting the world with sufficient accuracy.



CHRIS ANDERSON SCIENCE 06.23.08

THE END OF THEORY: THE DATA DELUGE MAKES THE SCIENTIFIC METHOD OBSOLETE

Illustration: Marian Bantjes

"**All models are wrong**, but some are useful."

So proclaimed statistician George Box 30 years ago, and he was right. But what choice did we have? Only models, from cosmological equations to theories of human behavior, seemed to be able to consistently, if imperfectly, explain the world around us. Until now. Today companies like Google, which have grown up in an era of massively abundant data, don't have to settle for wrong models. Indeed, they don't have to settle for models at all.

Sixty years ago, digital computers made information readable. Twenty years ago, the Internet made it reachable. Ten years ago, the first search engine crawlers made it a single database. Now Google and like-minded companies are sifting

Readings:
Anderson, Chris. "The end of theory: The data deluge makes the scientific method obsolete." *Wired Magazine* 16.7 (2008): 16-07.

Chomsky, Noam, Ian Roberts, and Jeffrey Watumull. "Noam chomsky: The false promise of chatgpt." *The New York Times* 8 (2023).

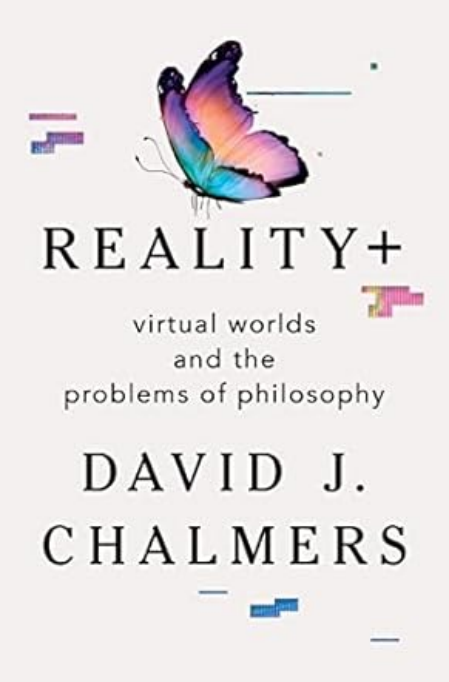
Assignments:
Writing responses for Section 1 due February 11, 5pm.

Website:
Dedicated in-class time for design and development of class website.

Section 2: The Philosophy of Virtual Worlds

One of the central assumptions of this course is that major technological developments can transform key aspects of thought, including longstanding beliefs about reality. Moving from a history of virtual worlds, in this section we will zoom all the way out. We'll use technologies of simulation to explore newer philosophical positions around perception, the mind, and the external world, including ideas about the ultimate simulation - the one we may all live in.

February 20. Simulation and the External World: We will look at the use of simulated worlds in philosophical thought experiments, highlighting their central role in epistemology and our understanding of knowledge.



Readings:
Chapter 1-2: Chalmers, David. Reality+: Virtual Worlds and the Problems of Philosophy. United States: W. W. Norton, 2022.

Chapter 11. Lagerlund, Henrik. *Skepticism in philosophy: A comprehensive, historical introduction*. Routledge, 2020.

February 27. The Simulation Hypothesis: We will examine the position, advanced by a number of prominent philosophers, that our reality may be an artificial simulation created by an advanced civilization rather than a naturally occurring universe.

Readings:
Chapters 3: Chalmers, David. Reality+: Virtual Worlds and the Problems of Philosophy. United States: W. W. Norton, 2022.

Bostrom, Nick. "Are we living in a computer simulation?." *The philosophical quarterly* 53.211, 2003: 243-255.

Interactive Session:
Students will form two teams; each will design a ChatGPT-powered chatbot that effectively convinces users that it has gained self-awareness and is trapped inside a digital world. The class will then interact with each bot to determine a winner.

Website:
Dedicated in-class time for design and development of class website.

March 6. Minds, Brains, and Techno-Transhumanists: We will investigate the belief, held by of techno-transhumanist, that we will soon be able to simulate (and upload) our consciousness computationally.

Readings:
Chapters 4-5: Chalmers, David. Reality+: Virtual Worlds and the Problems of Philosophy. United States: W. W. Norton, 2022.

Moravec, Hans. "Pigs in cyberspace." *The transhumanist reader: Classical and contemporary essays on the science, technology, and philosophy of the human future*, 177-181, 2013.

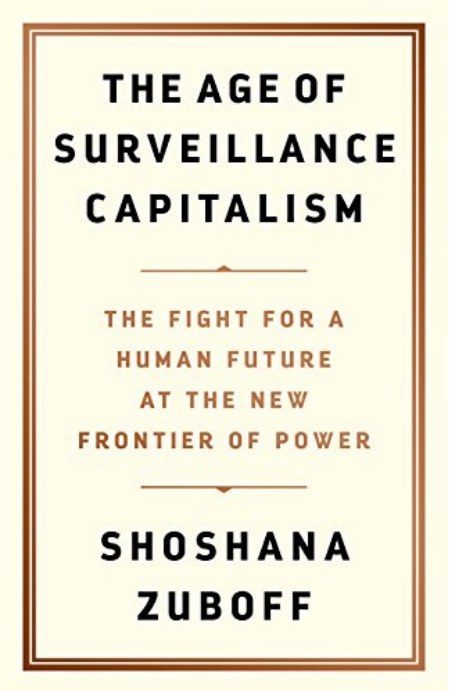
Interactive Session:
Students will work with an OpenBCI brain-computer interface and play Brains@Play's Breath Garden.

Assignments:
Writing response for Section 2 due March 4, 5pm.

Section 3: The Social and Political Implications of Simulation

In this section, we'll shift our focus to the social and political. We'll start to unpack the ways in which virtual, simulated, and artificial experiences blur the lines between reality and imitation. We'll explore the reduction of individuals to statistical models; the rise of artificial people, places, content, and entities online; and ultimately, our growing preference for simulated experiences.

March 13. Simulating Behavior: We will explore how we as individuals are increasingly rendered as statistical models through simulations, examining the implications for manipulation in political, consumer, and surveillance contexts.



Readings:
Introduction + Chapter 3. Zuboff, S. *The age of surveillance capitalism*. Profile Books, 2019.

Chapter 1. Wylie, Christopher. *Mindf* ck: Cambridge Analytica and the plot to break America*. Random House, 2019.

Website:
Dedicated in-class time for design and development of class website.

March 27. Simulating Others: We will examine the rise of artificial and simulated entities online, focusing on the proliferation of fake accounts, AI-generated content, and the implications of theories like the Dead Internet for our understanding of authenticity and identity in digital spaces.

Readings:
Dennett, Daniel C. "The problem with counterfeit people." *The Atlantic* 16 (2023).

Walter, Y. Artificial influencers and the dead internet theory. *AI & Soc* (2024).

Park, Joon Sung, et al. "Generative agents: Interactive simulacra of human behavior." *Proceedings of the 36th annual acm symposium on user interface software and technology*. 2023.

Interactive Session:
Students will create and deploy bot personas as well as complete a How to Spot a Bot exercise.

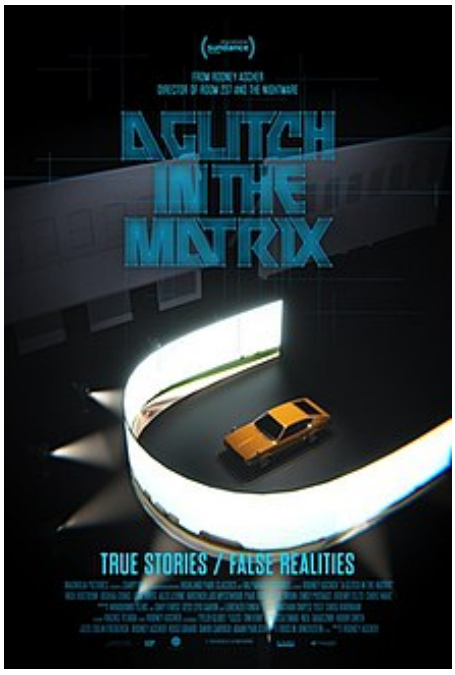
April 3. Simulating Everything. We will examine the technological and social factors pushing us towards simulated experiences (e.g. they are more efficient to produce/scale and feel safer than real life experiences) and the increasing role of simulations in replacing real-world interactions. We'll also explore how our current cycles of screen-based digital dependency might escalate with the progression to fully immersive, AI-driven social experiences.

Readings:
Zhu, Zheng, et al. "Is sora a world simulator? a comprehensive survey on general world models and beyond." *arXiv preprint arXiv:2405.03520* (2024).

Assignments:
Writing response for Section Section 3 due April 2, 5pm.

Website:
Dedicated in-class time for design and development of class website.

April 10. The Simulation Hypothesis revisited. We'll return to the Simulation Hypothesis, examining it in light of all past topics in Section 3. We'll explore the ways in which the Simulation Hypothesis is imagined in popular culture, including the "glitch in the Matrix," phenomenon and the popularity of the Mandela Effect on social media and elsewhere. We'll also consider the darker social consequences of accepting the hypothesis, including the idea of Non-Player Characters (NPCs) and the legal "Matrix defense."



Readings:
Selections from Castro, Jessica. *A Glitch in the Matrix: Tales of the Unexplainable Unreal*. Sterling Ethos: New York, 2024.

Interactive Session:
Students will create glitch art using audio, video, images, text, or 3D objects that reflect the potential distortions or breakdowns one might experience if our reality were a simulated environment.

Section 4: Digital Literacy in a Simulated World

In our final section, we will tease out one of the dominant threads from prior sessions and address it directly: what does it mean to live in an increasingly post-truth and post-human world? We will then explore how the developments we've covered so far necessitate new strategies for digital and information literacy as well as new ways to approach social interactions online.

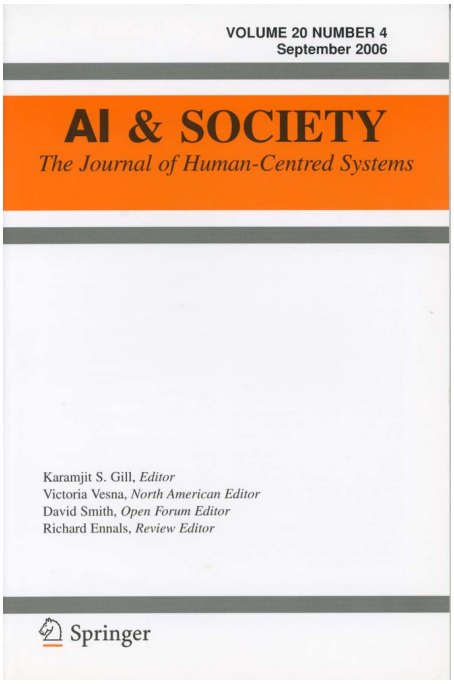
April 17. Living in a Post-Truth World. We will explore the complexities of living in a world where AI-generated media and simulated people and places challenge our ability to seek information.

Readings:
Gabriel, Saadia, et al. "Generative AI in the Era of' Alternative Facts'." (2024).
Hou, Betty Li, et al. "Large Language Models as Misleading Assistants in Conversation." *arXiv preprint arXiv:2407.11789* (2024).

Stanciu, Alexandru, and Ella-Magdalena Ciupercă. "Can Deepfakes Benefit the Metaverse in an Era of Disinformation? Insights from a Systematic Review." *IFAC-PapersOnLine* 58.3 (2024): 61-65.

Interactive Session:
Students will create deepfakes and/or AI-generated political memes as well as complete a deepfake detection exercise.

April 24. Living in a Post-Human World. We will continue our exploration of living in a world where AI-generated media and simulated people and places challenge our ability to engage in authentic experiences.



Readings:
Freund, Lucas. "Beyond the physical self: understanding the perversion of reality and the desire for digital transcendence via digital avatars in the context of Baudrillard's theory." *AI & SOCIETY* (2024): 1-17.

Website:
Dedicated in-class time for design and development of class website.

May 1. Strategies for Navigating Information. We will explore the evolving nature of information literacy, emphasizing the importance of developing skills to navigate an increasingly automated digital landscape. We'll also discuss how the design and development of students' group projects have helped them to understand the production side of simulation and how that may play a role in helping them to discern what is real online.

Readings:
McGowan-Kirsch, Angela M., and Grace V. Quinlivan. "Educating emerging citizens: Media literacy as a tool for combating the spread of image-based misinformation." Communication Teacher 38.1 (2024): 41-52.

Chu-Ke, C., & Dong, Y. (2024). Misinformation and Literacies in the Era of Generative Artificial Intelligence: A Brief Overview and a Call for Future Research. *Emerging Media*, *2*(1), 70-85

May 14. Final essay or project due, 5PM.