

LMC 8001 – Proseminar II

Spring 2024

3 Units

(Details of the syllabus subject to change; the version on Canvas will be the most up-to-date!)

Course Information

Course Meeting

Wednesday 12:30-1:45pm; 2-3:15pm

Skiles 010

Instructor

Richmond Wong, PhD

Assistant Professor, Digital Media, School of Literature Media & Communication

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[he/him/his](#)

Drop-In (“Office”) Hours

To be announced, link on canvas. Please email me in the meantime to set up an appointment (or if the listed times don’t work for you).

Course Description

This course is to provide an understanding of approaches to research and major topics in design and human-computer interaction (HCI). We will discuss how research questions, methods, and disciplines take different approaches to framing problems, claiming validity, make arguments, and shape and create knowledge. The course will primarily consist of readings and seminar discussions, though we may also have guest speakers or other activities on certain days.

Materials

All required readings will be available as PDFs through Canvas or the Georgia Tech library

Course Technology

- Readings and assignments will be on Canvas
- We have a Microsoft Folder: https://gtvault-my.sharepoint.com/:f/g/personal/rwong34_gatech_edu/Ej3Phagu_mRHnQDP104wH1sB5Y3Pj3wKGMHg_sdOdX9069A?e=RVdBHh
 - Collective Notes Doc: https://gtvault-my.sharepoint.com/:w/g/personal/rwong34_gatech_edu/EWJPMf_is9VKmtOpygDtjTMBwVHie_nbHXsIM8IAwRBCz6Q?e=DozOxM

Course Objectives and Learning Outcomes

The course objective is to lay a foundation for understanding creative research methods as related to digital media. The course learning outcomes are:

- Understand the historical, theoretical, and cultural contexts of design and HCI research
- To create and analyze digital artifacts with an awareness of history and culture, with respect and sensitivity to multiple and diverse audiences.
- Apply formal concepts and theories using appropriate methods

Course Approach and Philosophy

Many, though not all, readings in this class are from the quals list, spanning design, HCI, and STS. The goal of this class is not necessarily to read through the quals list, but to provide enough background and scaffolding so that you can have a framework to work your way through the quals reading lists.

The course will primarily be in a seminar style – so students are expected to keep up with the readings and participate in class discussions and/or the Canvas discussion threads. Readings should be completed before class. We'll talk about strategies for reading books during the first week, but the key goal will be to focus on reading for the main argument(s) of each reading, rather than reading word-for-word to memorize every specific detail and example presented by the authors.

Some aspects of the class may change over time. We'll go through the syllabus and proposed course readings together during the first week of class and identify readings and topics that we may want to emphasize more. We will also start the semester with a shared collaborative notes doc to help us start our discussions, and evaluate how well this works for us.

Most weeks, I'm splitting the class readings and class times into 2 sessions, an "A" and "B" block (with a short break in between). We'll usually spend about half of our time on topic A and half on topic B, although most weeks the A and B topics will have thematic connections.

On reading - at Georgia Tech, 3 credit class usually indicates that students should expect to spend about 6 hours per week on the class outside of our meeting times. Given that, I'd say you should not be spending more than 4 hours per week reading for this class. It is a skill that you can develop over time, so reading should get faster during the semester. But if you are consistently spending more than 4 hours per week looking at the readings, let me know and we can work in more depth on developing reading strategies.

On writing – I strongly believe that writing is a way of thinking, formulating, and refining one's ideas. Weekly writing activities in response to the readings are an important way to help develop this skill. If you feel like you need additional help, please reach out and I can help provide some resources. The GaTech Communication Center (<https://www.communicationcenter.gatech.edu/>) is a useful resource to help improve writing in general.

On discussion – everyone has different experiences and backgrounds, and we all bring a different and unique take on the readings. Towards this end, I strive to create a learning environment built on respect, curiosity, generosity, and humility, during our interactions with each other. We will also have a collective notes doc to use during class as a backchannel, place to share notes, and to share initial thoughts or ideas at the beginning of class:

https://gtvault-my.sharepoint.com/:w:/g/personal/rwong34_gatech_edu/EWJPMf_is9VKmtOpygDtjTMBwVHienbHXsIM8IAwRBCz6Q?e=DozOxM

Assignments and Grading

Major assignments during the class add up to 100 points total.

Reading Reflections (10 out of 13 weeks, 2 points each): 20 points

Each week you will be expected to post a reading reflection to a Discussion thread on Canvas before we meet. Please post these by noon on Wednesdays. Reading reflections are meant to help you explore possible ideas through writing. Grading is based on completion.

- Reading reflections should engage at least 2 (or more) readings from a week
- The format of these short writings can vary.
 - You can do a "standard" response that analyzes the readings, their themes, and how they relate to each other
 - You might reflect on initial research ideas or connections these readings sparked for you
 - You might critique the readings' approaches or claims

- You might try to apply the theories or concepts to another domain or experience
- You might contribute some discussion questions
- You might ask questions about concepts, words, or passages that you didn't understand
- You can use these as opportunities to be creative as well! For example:
 - Write a letter as one of the authors that we read, written to another author about their work
 - Write a fictional memo to a company saying why the ideas in the readings are relevant or important to them
 - Write a short script or skit about the readings

Participation: 35 points

Participation can include lots of things – you don't need to have some amazing brilliant insight or even have fully understood all the readings. Questions, issues, examples are all ok, such as:

- What did the author mean on page X when they wrote [...]?
- This approach looks interesting, but how would you actually do it?
- I had a half-baked idea while reading this, and I'd like to see what others think about [...]
- I'm not sure how this counts as research/STS/HCI/Design
- I found this thing outside of class that seems like an example of the reading, but doesn't fully seem to fit [author's] concept.
- We've read X and Y, which seem to contradict or critique each other. I tend to side with X, but I'm curious if anyone sided with Y, and why so?
- I worked on a project similar to paper X, but I did A, while X did B. I wonder what would have happened if I went in a different direction.

Discussion Lead (2 times, 5 points each): 10 points

Students will each sign up to lead the discussion for at least 2 half-sessions, starting in week 3. Leading the discussion means helping provide generative questions that help us draw connections and critically discuss the readings, beyond "what did everyone think of the reading?" Some things that you might do include:

- Identify a theme common to several readings and invite discussion about its differences and significance across the readings
- Identify potential contradictions or tensions between the readings
- Situate a reading in relation to something we previously read
- Point to a specific passage that is difficult to understand and invite interpretations and discussion
- Ask or propose how a concept/method/theory might relate to our own research
- Finding a paper that cites one of the readings from the week, summarize it for us, and tell us how that paper made use of what we read.

Discussion leads may also want to skim through the class reading responses and see if there's anything that you might invite people to talk more about.

(Participation and discussion prompts adapted from Showen Bardzell's IST597 course)

Final Essay: 35 points

More details will be shared later, but this will likely consist of an option to create a research proposal, or to write a synthesis of several papers from the course.

- Final essay topic proposal/brainstorm = 5 points
- Outline/draft = 10 points
- Final version = 20 points

Course Schedule

- Weeks 1-3 focus on theoretical background
- Weeks 4-8 provide an introduction to HCI and design, and some historical and cultural context
- Weeks 9-14 focus on specific areas of research in HCI and design

Part 1: Theoretical Background

1. January 10: Introduction

Readings: No readings beforehand

Class:

- Introductions
- Read how to read readings
 - Mar Hicks' Reading Tips for History Classes: <https://marhicks.com/blog/?p=681>
 - Paul Edwards' How to Read a Book: <http://pne.people.si.umich.edu/PDF/howtoread.pdf>
- Apply to some readings (readings available on Canvas):
 - Jessica McCrory Calarco. 2020. A Field Guide to Grad School: Uncovering the Hidden Curriculum. Princeton University Press, Princeton, New Jersey. **Chapter 4: Reading and Writing about Other People's Research (PDF pg 68-73)**
 - Madeleine Akrich. 1992. The De-Description of Technical Objects. In *Shaping Technology Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law (eds.). MIT Press, 205–224.
- Short discussion and use of the shared Word Doc for comments: https://gtvault-my.sharepoint.com/:w:/g/personal/rwong34_gatech_edu/EWJPMF_is9VKmtOpygDtjTMBwVHienbHXsIM8lAwRBCz6Q?e=DozOxM
- Go over class syllabus and collectively indicate interests: https://gtvault-my.sharepoint.com/:w:/g/personal/rwong34_gatech_edu/EbXGbXVD12lFu8sXuXamsWEB3OL17HLYQe5DNst2xf3RKw?e=kIJKpf

2. January 17: Scientific Knowledge and Inquiry

- A. What is "Science"?
 - a. Sismondo, Sergio (2008) 1. Science and Technology Studies and an Engaged Program. In *The handbook of science and technology studies* (Third edition). Edited by Edward J. Hackett et al. MIT Press. Pages 13-31
 - b. Stengers, Isabelle. Power and Invention. Excerpts:
 - i. Latour, Bruno. Foreword: Stengers's Shibboleth. In Stengers, Isabelle. Power and Invention. (pages vii-xx)
 - ii. Chapter 4. Turtles All the Way Down (pages 61-75)
- B. Interpretivist approaches to inquiry (77 pages)
 - a. Clarke, A. E., & Charmaz, K., (2019). Grounded Theory and Situational Analysis, In *P. Atkinson, S. Delamont, A. Cernat, J.W. Sakshaug, & R.A. Williams (Eds.), SAGE Research Methods Foundations*. <https://doi.org/10.4135/9781526421036825838> [pages 1-40, but lots of images! Online version may be easier to read]
 - b. Weber, M. (1968). Basic Sociological Terms. *Economy and Society*. G. Roth and C. Wittich. Berkeley, University of California Press. Read Parts 1 and 2 [pages 4-26]
 - c. Clifford Geertz. 1973. Thick description: Toward an interpretive theory of culture. In *Interpretation of Cultures: Selected Essays*. Basic Books, New York. Read Sections III - VI [pgs 10-23 (8-21 in PDF)]

C. *Optional:*

- a. Bourdieu (2004) *Science of science and reflexivity: Chapter 1 – The State of the Question*
- b. Stengers, Isabelle. *Power and Invention. Chapter 9. Who is the author? [pages 153-174]*
- c. Stefan Timmermans and Iddo Tavory. 2012. *Theory construction in qualitative research: From grounded theory to abductive analysis. Sociological Theory 30, 3 (2012), 167–186.*
<https://doi.org/10.1177/0735275112457914>

Class Activities:

- Sign up for discussion lead dates

3. January 24: Theories of Technology and Society

- A. Artifacts have politics; Social Construction of Tech
 - a. Langdon Winner. 1980. Do Artifacts Have Politics? *Daedalus* 109, 1 (1980), 121–136.
 - b. Bijker, Wiebe E., Thomas P. Hughes, and Trevor Pinch. The Social Construction of Facts and Artifacts In *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. Chapter 1, (2012 version, pages 11-44)
- B. Representations and Abstractions (52 pages)
 - a. James C. Scott. 1998. Seeing Like a State. Chapter 1: Nature and Space. (pg 11-52)
 - b. Andrew D. Selbst, Danah Boyd, Sorelle A. Friedler, Suresh Venkatasubramanian, and Janet Vertesi. 2019. Fairness and Abstraction in Sociotechnical Systems. In Proceedings of the Conference on Fairness, Accountability, and Transparency (FAT* '19). Association for Computing Machinery, New York, NY, USA, 59–68. <https://doi.org/10.1145/3287560.3287598>
- C. *Optional*
 - a. Helen Nissenbaum. 2001. How computer systems embody values. *Computer* 34, 3 (March 2001), 120–119.
 - b. Bryan Pfaffenberger. 1992. *Technological Dramas. Science, Technology & Human Values* 17, 3 (1992), 282–312.
 - c. Deirdre K. Mulligan and Helen Nissenbaum. 2020. *The Concept of Handoff as a Model for Ethical Analysis and Design. In The Oxford Handbook of Ethics of AI, Markus D. Dubber, Frank Pasquale and Sunit Das (eds.). Oxford University Press, 231–251.*
<https://doi.org/10.1093/oxfordhb/9780190067397.013.15>

Part 2: HCI and Design Basics

4. January 31: Precursors and Early HCI

- A. Cybernetics
 - a. Vannevar Bush. July 195. As We May Think. *The Atlantic*. Pages 1-22
 - b. Paul N. Edwards. 1997. Ch 6. The Machine in the Middle: Cybernetic Psychology and World War II. *The Closed World: Computers and the Politics of Discourse in Cold War America*. The MIT Press. Pages 175-208 <https://doi.org/10.7551/mitpress/1871.001.0001>
- B. Cognition and Computing and Design
 - a. Stuart K. Card, Thomas P. Moran, and Allen Newell. 1983. *The psychology of human-computer interaction*. Lawrence Erlbaum Associates, Inc., Mahwah, New Jersey. Chapters 1-2 (An Applied-Information Psychology, and The Human Information-Processor)
 - i. Read Chapters 1-2 (pg 1-44)
 - ii. Skim 2.2-2.3 (pg 44-97); but take a look at Fitts' Law on pg 51-57

- b. Donald A. Norman. 2002. Chapter 1, The Psychopathology of Everyday Things. In *The Design of Everyday Things*. 2nd Edition. Basic Books, New York. Pages 1-33.
- C. *Optional*
 - a. *The rest of Paul N. Edwards*. 1997. *The Closed World: Computers and the Politics of Discourse in Cold War America*. The MIT Press. <https://doi.org/10.7551/mitpress/1871.001.0001>
 - b. Joseph Weizenbaum. 1966. ELIZA—a computer program for the study of natural language communication between man and machine. *Commun. ACM* 9, 1 (Jan. 1966), 36–45. <https://doi.org/10.1145/365153.365168>
 - c. Engelbart, D. C. *Augmenting Human Intellect: A Conceptual Framework*. 1962. SRI Project 3578 for Air Force Office of Scientific Research. Menlo Park, Ca., Stanford Research Institute. <https://www.dougenelbart.org/pubs/auqment-3906.html> [Q HCI]
 - d. Donald A. Norman. 2002. Chapter 7, *User-Centered Design*. In *The Design of Everyday Things*. 2nd Edition. Basic Books, New York. Pgs 187-218.

5. February 7: Early critical turns in cognition

- A. Situated Actions, Cognition in practice, and Activity Theory (79 pages)
 - a. Lucy Suchman. 2006. *Human-machine reconfigurations: Plans and situated actions* (2nd ed.). Cambridge University Press, Cambridge.
 - i. Introduction, and Chapter 1: Readings and Responses (pgs 1-23)
 - ii. Chapter 3: Introduction to the 1st Edition (pgs 29-32)
 - iii. Chapter 5: Plans; Chapter 6: Situated Actions (pgs 51-84)
 - b. Bonnie A Nardi. 1996. Studying context: A comparison of activity theory, situated action models, and distributed cognition. In *Context and consciousness: Activity theory and human-computer interaction*, 35–52.
- B. Critical Technical Practice
 - a. Philip E. Agre. 1997. *Computation and human experience*. Cambridge University Press, Cambridge. Excerpts:
 - i. Preface (pgs x-xvi);
 - ii. Chapter 1: Introduction (pgs 1-26)
 - iii. Chapter 2: Metaphor in Practice (pgs 27-48)
 - b. Philip E Agre. 1997. *Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI. Social Science Technical Systems and Cooperative Work Beyond the Great Divide* (1997), 1–17.
- C. *Optional*
 - a. Terry Winograd and Fernando Flores. 1987. *Understanding Computers and Cognition*. Addison-Wesley Pub. Co., Boston.
 - b. Edwin Hutchins. 1996. *Cognition in the Wild* (Revised ed. edition ed.). MIT Press, Cambridge, Mass. Introduction (pg xi-xviii); Chapter 1: Welcome Aboard (pg 1-48); Chapter 9: Cultural Cognition (pg 353-374)
 - c. Nicholas Davis, Chih-Pin Hsiao, Kunwar Yashraj Singh, Brenda Lin, and Brian Magerko. 2017. *Creative Sense-Making: Quantifying Interaction Dynamics in Co-Creation*. In *Proceedings of the 2017 ACM SIGCHI Conference on Creativity and Cognition (C&C '17)*. Association for Computing Machinery, New York, NY, USA, 356–366. <https://doi.org/10.1145/3059454.3059478>

6. February 14: HCI as a Field, and PhD-Meta

- A. HCI as a field

- a. Yvonne Rogers. 2012. HCI Theory: Classical, Modern, and Contemporary. Springer International Publishing, Cham. <https://doi.org/10.1007/978-3-031-02197-8>. Chapters 4-6 (pgs 21-80)
 - b. Jacob O. Wobbrock and Julie A Kientz. 2016. Research contribution in human-computer interaction. *interactions* 23, 3 (April 2016), 38–44. <https://doi.org/10.1145/2907069>
 - c. Steve Harrison, Deborah Tatar, and Phoebe Sengers. 2007. The three paradigms of HCI. 2007. 1–18.
 - d. Paul Dourish. 2006. Implications for design. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '06). Association for Computing Machinery, New York, NY, USA, 541–550. <https://doi.org/10.1145/1124772.1124855>
- B. PhD Meta
- a. Jessica McCrory Calarco. 2020. *A Field Guide to Grad School: Uncovering the Hidden Curriculum*. Princeton University Press, Princeton, New Jersey.
 - i. Chapter 7: Writing about your research
 - ii. Chapter 8: Publishing and promoting your work
 - iii. Chapter 9: Talking about your research
 - iv. Chapter 10: Going to conferences
- C. *Optional*
- a. Jessica Calarco. 2019. *Article Writing 101*. <http://www.jessicacalarco.com/teaching-resources-1/2019/8/30/article-writing-101>

Class Activities:

- We'll look at SIGCHI resources online and see
- We'll each look at a past Dissertation from Digital Media and talk a little bit about how a Dissertation is organized: <https://dm.lmc.gatech.edu/alumni-dissertations/>

7. February 21: Ways of Knowing

- A. Feminist Epistemologies
- a. Donna Haraway. 1988. Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies* 14, 3 (1988), 575–599. <https://www.jstor.org/stable/3178066>
 - b. Sandra Harding. 1992. Rethinking Standpoint Epistemology: What Is “Strong Objectivity?” *The Centennial Review* 36, 3 (1992), 437–470. <https://www.jstor.org/stable/23739232?seq=20>
- B. Design as a way of knowing
- a. Donald A. Schön. 1983. *The reflective practitioner: How professionals think in action*. Routledge. Ch 2: From Technical Rationality to Reflection-In-Action: Excerpts (pg 21-30 AND 49-69)
 - b. Janet Vertesi, David Ribes, Laura Forlano, Yanni Loukissas, and Marisa Leavitt Cohn. 2016. Engaging, Designing and Making Digital Systems. In *The handbook of science and technology studies* (6th ed.), Ulrike Felt, Rayvon Fouche, Clark A. Miller and Laurel Smith-Doerr (eds.). The MIT Press. 169-193
 - c. William Gaver. 2014. Science and Design: The Implications of Different Forms of Accountability. In *Ways of Knowing in HCI*, Judith S. Olson and Wendy A. Kellogg (eds.). Springer New York, New York, NY, 143–165. https://doi.org/10.1007/978-1-4939-0378-8_7
- C. *Optional*
- a. Schon. 1983. *The Reflective Practitioner. Ch 3: Design as a Reflective Conversation with the Situation* (76-104)
 - b. Bill Gaver and Kia Höök. 2017. In search of the elusive CHI design paper. *interactions* 24, 2 (March + April 2017), 22–23. <https://doi.org/10.1145/3039901>

- c. William Gaver and Kristina Höök. 2017. What makes a good CHI design paper? *interactions* 24, 3 (May + June 2017), 20–21. <https://doi.org/10.1145/3076255>
- d. John Zimmerman, Jodi Forlizzi, and Shelley Evenson. 2007. Research through design as a method for interaction design research in HCI. In *Proceedings of the SIGCHI conference on Human factors in computing systems (CHI '07)*, 2007, New York, New York, USA. ACM Press, New York, New York, USA, 493-502. <https://doi.org/10.1145/1240624.1240704>
- e. William Gaver. 2012. What should we expect from research through design? In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '12)*. Association for Computing Machinery, New York, NY, USA, 937–946. <https://doi.org/10.1145/2207676.2208538>

8. February 28: Design Oriented Methods

A. Speculative methods

- a. Anthony Dunne and Fiona Raby. 2013. *Speculative Everything*. The MIT Press, Cambridge, Massachusetts.
 - i. A/B chart (pg vii)
 - ii. Ch 1: Beyond Radical Design? (pg 1-9)
 - iii. Ch 3: Design as Critique (pg 33-45)
- b. Joseph Lindley and Paul Coulton. 2015. Game of Drones. In *Proceedings of the 2015 Annual Symposium on Computer-Human Interaction in Play - CHI PLAY '15*, 2015, London. ACM Press, London, 613–618. <https://doi.org/10.1145/2793107.2810300>
- c. Os Keyes, Jevan Hutson, and Meredith Durbin. 2019. A Mulching Proposal. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems*, May 2019, New York, NY, USA. ACM, New York, NY, USA, 1–11. <https://doi.org/10.1145/3290607.3310433>
- d. Sandjar Kozubae, Chris Elsdén, Noura Howell, Marie Louise Juul Søndergaard, Nick Merrill, Britta Schulte, and Richmond Y Wong. 2020. Expanding Modes of Reflection in Design Futuring. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, April 21, 2020, New York, NY, USA. ACM, New York, NY, USA, 1–15. <https://doi.org/10.1145/3313831.3376526>

B. Politics of Design Methods and Participation

- a. Christo Sims. 2017. The Politics of Design, Design as Politics. In *The Routledge Companion to Digital Ethnography*, Larissa Hjorth, Heather Horst, Anne Galloway and Genevieve Bell (eds.). Routledge, New York, 439–447.
- b. Christopher A. Le Dantec and Sarah Fox. 2015. Strangers at the Gate: Gaining Access, Building Rapport, and Co-Constructing Community-Based Research. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW '15)*. Association for Computing Machinery, New York, NY, USA, 1348–1358. <https://doi.org/10.1145/2675133.2675147>
- c. Marc Steen. 2013. Co-Design as a Process of Joint Inquiry and Imagination. *Design Issues* 29, 2 (2013), 16–28. <https://www.jstor.org/stable/24266991>
- d. Nassim Parvin. 2018. Doing Justice to Stories: On Ethics and Politics of Digital Storytelling. *Engaging Science, Technology, and Society* 4, (November 2018), 515–534. <https://doi.org/10.17351/ests2018.248>

C. Optional

- a. Mike Michael. 2012. “What Are We Busy Doing?”: *Engaging the Idiot*. *Science, Technology, & Human Values* 37, 5 (September 2012), 528–554. <https://doi.org/10.1177/0162243911428624>
- b. Richmond Y. Wong and Vera Khovanskaya. 2018. *Speculative Design in HCI: From Corporate Imaginations to Critical Orientations*. In *New Directions in 3rd Wave HCI*, Michael Filimowicz (ed.). Springer, Cham, Switzerland, 175–202. https://doi.org/10.1007/978-3-319-73374-6_10

- c. Cynthia L. Bennett and Daniela K. Rosner. 2019. *The Promise of Empathy: Design, Disability, and Knowing the "Other"*. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)*. Association for Computing Machinery, New York, NY, USA, Paper 298, 1–13. <https://doi.org/10.1145/3290605.3300528>
- d. Carl DiSalvo. 2012. *Chapter 1: Design and Agonism*. In *Adversarial Design*. The MIT Press, Cambridge, Massachusetts. Pg 1-26.
- e. Gillian R. Hayes. 2011. *The relationship of action research to human-computer interaction*. *ACM Trans. Comput.-Hum. Interact.* 18, 3, Article 15 (July 2011), 20 pages. <https://doi.org/10.1145/1993060.1993065>

Part 3: Major topics in HCI and Design

9. March 6: Critical HCI

- A. Early Critical turns in HCI
 - a. William W. Gaver, Jacob Beaver, and Steve Benford. 2003. *Ambiguity as a resource for design*. In *Proceedings of the conference on Human factors in computing systems (CHI '03)*, 2003, New York, New York, USA. ACM Press, New York, New York, USA, 233-240. <https://doi.org/10.1145/642611.642653>
 - b. Phoebe Sengers, Kirsten Boehner, Shay David, and Joseph Jofish Kaye. 2005. *Reflective design*. In *Proceedings of the 4th decennial conference on Critical computing between sense and sensibility - CC '05*, 2005, New York, New York, USA. ACM Press, New York, New York, USA, 49-58. <https://doi.org/10.1145/1094562.1094569>
 - c. Eric P.S. Baumer and M. Six Silberman. 2011. *When the implication is not to design (technology)*. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11)*. Association for Computing Machinery, New York, NY, USA, 2271–2274. <https://doi.org/10.1145/1978942.1979275>
- B. Critical Design & Critical Computing
 - a. Jeffrey Bardzell and Shaowen Bardzell. 2013. *What is "critical" about critical design?* In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '13*, 2013, New York, New York, USA. ACM Press, New York, New York, USA, 3297-3306. <https://doi.org/10.1145/2470654.2466451>
 - b. James Pierce, Phoebe Sengers, Tad Hirsch, Tom Jenkins, William Gaver, and Carl DiSalvo. 2015. *Expanding and Refining Design and Criticality in HCI*. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*, April 2015, New York, NY, USA. ACM, New York, NY, USA, 2083–2092. . <https://doi.org/10.1145/2702123.2702438>
 - c. Shaowen Bardzell. 2010. *Feminist HCI: taking stock and outlining an agenda for design*. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '10)*. Association for Computing Machinery, New York, NY, USA, 1301–1310. <https://doi.org/10.1145/1753326.1753521>
- C. Optional
 - a. James W. Carey and John J. Quirk. 1970. *The Mythos of the Electronic Revolution*. *The American Scholar* 39, 3 (1970), 395–424. <https://www.jstor.org/stable/41210251>
 - b. Katie Shilton. 2018. *Values and Ethics in Human-Computer Interaction*. *Foundations and Trends® in Human-Computer Interaction* 12, 2 (2018), 107–171. <https://doi.org/10.1561/11000000073>
 - c. James Pierce. 2021. *In Tension with Progression: Grasping the Frictional Tendencies of Speculative, Critical, and other Alternative Designs*. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21)*. Association for Computing Machinery, New

York, NY, USA, Article 617, 1–19. <https://doi.org/10.1145/3411764.3445406>

10. March 13: Ubiquitous/Tangible Computing, and Online Communities

- A. Ubicomp/Tangible computing and its critique
 - a. Mark Weiser. 1991. The Computer for the 21st century. *Scientific American* 265, (1991), 94–104.
 - b. Hiroshi Ishii and Brygg Ullmer. 1997. Tangible bits: towards seamless interfaces between people, bits and atoms. In *Proceedings of the ACM SIGCHI Conference on Human factors in computing systems (CHI '97)*. Association for Computing Machinery, New York, NY, USA, 234–241. <https://doi.org/10.1145/258549.258715>
 - c. Matthew Chalmers, Ian MacColl, and Marek Bell. 2003. Seamful design: showing the seams in wearable computing. In *IEE Euroearable '03, 2003*. IEE, 11–16. <https://doi.org/10.1049/ic:20030140>
 - d. Genevieve Bell and Paul Dourish. 2007. Yesterday's tomorrows: Notes on ubiquitous computing's dominant vision. *Personal and Ubiquitous Computing* 11, (2007), 133–143. <https://doi.org/10.1007/s00779-006-0071-x>
- B. Online Identities and communities
 - a. Danah Boyd. 2010. *Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications*. In *A Networked Self*. Routledge. (20 pages)
 - b. Christine Hine. 2000. *Virtual Ethnography*. SAGE Publications Ltd. <https://doi.org/10.4135/9780857020277>. Chapter 2: Internet as Culture and Cultural Artefact. (pg 15-40)
- C. *Optional*
 - a. *Paul Dourish and Genevieve Bell. 2011. Divining a Digital Future: Mess and Mythology in Ubiquitous Computing. The MIT Press, Cambridge, Massachusetts.*
 - b. *Paul Dourish and Genevieve Bell. 2013. "Resistance is futile": reading science fiction alongside ubiquitous computing. Personal and Ubiquitous Computing 18, 4 (May 2013), 769–778. https://doi.org/10.1007/s00779-013-0678-7*
 - c. *Turkle, S. (2011). Life on the Screen. Simon and Schuster.*
 - d. *Boellstorff, T. (2015). Coming of age in Second Life: An anthropologist explores the virtually human. Princeton University Press.*
 - e. *Brock Jr, A. (2020). Distributed blackness. New York University Press.*

March 20: Spring Break, No Class

11. March 27: Infrastructures, Work, and Computer-Supported Cooperative Work (CSCW)

- A. Infrastructure
 - a. Susan Leigh Star. 1999. The Ethnography of Infrastructure. *American Behavioral Scientist* 43, 3 (November 1999), 377–391. <https://doi.org/10.1177/00027649921955326>
 - b. Jenna Burrell. 2018. Thinking relationally about digital inequality in rural regions of the U.S. *First Monday* 23, 6 (June 2018). <https://doi.org/10.5210/fm.v23i6.8376> (~11 pages)
 - c. Richmond Y Wong, Vera Khovanskaya, Sarah E Fox, Nick Merrill, and Phoebe Sengers. 2020. Infrastructural Speculations: Tactics for Designing and Interrogating Lifeworlds. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, April 21, 2020, New York, NY, USA. ACM, New York, NY, USA, 1–15. <https://doi.org/10.1145/3313831.3376515>
- B. Work practice

- a. Susan Leigh Star and Anselm Strauss. 1999. Layers of Silence, Arenas of Voice: The Ecology of Visible and Invisible Work. *Computer Supported Cooperative Work (CSCW)* 8, 1 (March 1999), 9–30. <https://doi.org/10.1023/A:1008651105359>
 - b. Arlie Russell Hochschild. 1983. *The Managed Heart: Commercialization of Human Feeling*. University of California Press, Berkeley, CA. Ch 6: Feeling Management: From Private to Commercial Uses. (pgs 68-95 in PDF)
 - c. Sara Ahmed. 2019. A Complaint Biography. *Biography* 42, 3 (2019), 514–523. <https://doi.org/10.1353/bio.2019.0057>
- C. *Optional*
- a. Geoffrey C Bowker and Susan Leigh Star. 2000. *Sorting things out: Classification and its consequences*. MIT press. Ch 7: What a Difference a Name Makes—The Classification of Nursing Work (229-254)
 - b. Charlotte P. Lee, Paul Dourish, and Gloria Mark. 2006. *The human infrastructure of cyberinfrastructure*. In *Proceedings of the 2006 20th anniversary conference on Computer supported cooperative work, November 04, 2006, Banff Alberta Canada*. ACM, 483–492. <https://doi.org/10.1145/1180875.1180950>
 - c. Susan Leigh Star and Karen Ruhleder. 1994. *Steps towards an ecology of infrastructure: complex problems in design and access for large-scale collaborative systems*. In *Proceedings of the 1994 ACM conference on Computer supported cooperative work (CSCW '94)*. Association for Computing Machinery, New York, NY, USA, 253–264. <https://doi.org/10.1145/192844.193021>
 - d. Geoffrey C. Bowker, Karen Baker, Florence Millerand, and David Ribes. 2010. *Toward Information Infrastructure Studies: Ways of Knowing in a Networked Environment*. In *International Handbook of Internet Research*. Springer Netherlands, Dordrecht, 97–117. https://doi.org/10.1007/978-1-4020-9789-8_5
 - e. Lisa Parks and Nicole Starosielski (Eds.). 2015. *Signal Traffic: Critical Studies of Media Infrastructures*. University of Illinois Press. Chapter 1: Introduction. Pgs 1-27
 - f. Nicole Starosielski. 2015. *The Undersea Network*. Duke University Press, Durham.
 - g. Shoshana Zuboff. 1988. *In the Age of the Smart Machine: The Future of Work and Power*. Basic Books, New York.
 - h. Steve Sawyer, Ingrid Erickson, and Mohammad Hossein Jarrahi. 2019. *Infrastructural Competence*. In *digitalSTS: A Field Guide for Science & Technology Studies*, Janet Vertesi and David Ribes (eds.). Princeton University Press, 267–279. Retrieved from <https://digitalsts.net/essays/infrastructural-competence/>
 - i. Richmond Y. Wong. 2021. *Tactics of Soft Resistance in User Experience Professionals' Values Work*. *Proc. ACM Hum.-Comput. Interact.* 5, CSCW2, Article 355 (October 2021), 28 pages. <https://doi.org/10.1145/3479499>

12. April 3: Power and Justice

- A. Recognizing Issues of Power and Justice
 - a. Lilly Irani, Janet Vertesi, Paul Dourish, Kavita Philip, and Rebecca E. Grinter. 2010. Postcolonial computing: a lens on design and development. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '10)*. Association for Computing Machinery, New York, NY, USA, 1311–1320. <https://doi.org/10.1145/1753326.1753522>
 - b. Christina N. Harrington, Shamika Klassen, and Yolanda A. Rankin. 2022. “All that You Touch, You Change”: Expanding the Canon of Speculative Design Towards Black Futuring. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22)*. Association for Computing Machinery, New York, NY, USA, Article 450, 1–10. <https://doi.org/10.1145/3491102.3502118>

- c. Lisa Nakamura. 2014. Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture. *American Quarterly* 66, 4 (2014), 919–941.
- B. Considering design and alternatives
 - a. Lynn Dombrowski, Ellie Harmon, and Sarah Fox. 2016. Social Justice-Oriented Interaction Design: Outlining Key Design Strategies and Commitments. In *Proceedings of the 2016 ACM Conference on Designing Interactive Systems (DIS '16)*. Association for Computing Machinery, New York, NY, USA, 656–671. <https://doi.org/10.1145/2901790.2901861>
 - b. Carl DiSalvo. 2012. Ch 2: Revealing Hegemony – Agonistic Information Design. In *Adversarial Design*. The MIT Press, Cambridge, Massachusetts. Pg 27-55
 - c. Daniela K. Rosner. 2018. *Critical Fabulations: Reworking the Methods and Margins of Design*. The MIT Press, Cambridge, Massachusetts.
 - i. Introduction: Why Fabulate Design? (pg 1-22)
 - ii. Ch 2: Feminist Correctives in Design (pg 41-58)
 - iii. Ch 4: Approaching Design as Critical Fabulations (81-100)
- C. *Optional*
 - a. Ruha Benjamin. 2019. *Race after technology: abolitionist tools for the new Jim code*. Polity, Medford, MA.
 - b. Ihudiya Finda Ogbonnaya-Ogburu, Angela D.R. Smith, Alexandra To, and Kentaro Toyama. 2020. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–16. <https://doi.org/10.1145/3313831.3376392>

13. April 10: Posthumanism and More-Than-Human Design

- A. Humans and Things
 - a. Bruno Latour. 1992. Where are the missing masses? The sociology of a few mundane artifacts. In *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe Bijker and John Law (eds.). MIT Press, 225–258.
 - b. Ron Wakkary. 2021. *Things We Could Design: For More Than Human-Centered Worlds*. The MIT Press. Chapter 5 Prologue & Chapter 5: Things are Relational and Vital (pgs 121-160)
- B. Ecologies and Multispecies
 - a. Tsing, Anna. 2015. *The Mushroom at the End of the World*. Excerpts.
 - i. 1 Arts of Noticing (17-26)
 - ii. 2 Contamination as Collaboration: (27-36)
 - iii. 3 Some Problems with Scale (37-44)
 - iv. 11 The Life of the Forest (155-163)
 - b. Jen Liu, Daragh Byrne, and Laura Devendorf. 2018. Design for Collaborative Survival: An Inquiry into Human-Fungi Relationships. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. Association for Computing Machinery, New York, NY, USA, Paper 40, 1–13. <https://doi.org/10.1145/3173574.3173614>
 - c. Nadia Campo Woytuk and Marie Louise Juul Søndergaard. 2023. From Menstrual Care to Environmental Care. *interactions* 30, 4 (July - August 2023), 28–33. <https://doi.org/10.1145/3600015>
- C. *Optional:*
 - a. Latour, B. (2007). *Reassembling the social: An introduction to actor-network-theory*. Oxford.
 - b. Donna Haraway. 1991. *A Cyborg Manifesto Science, Technology, And Socialist-Feminism In The Late Twentieth Century*. In *Simians, Cyborgs and Women: The Reinvention of Nature* 1. 149–181.
 - c. Scott R. Klemmer, Björn Hartmann, and Leila Takayama. 2006. *How bodies matter: five themes for interaction design*. In *Proceedings of the 6th conference on Designing Interactive systems (DIS*

'06). *Association for Computing Machinery, New York, NY, USA, 140–149.*

<https://doi.org/10.1145/1142405.1142429>

- d. Jane Bennett. 2010. *Vibrant Matter: A Political Ecology of Things*. Duke University Press, Durham. Excerpts. Preface (Pg vii-xix); Ch 7: Political Ecologies (pg 94-109)

14. April 17: (Critical) Data and Algorithm Studies

A. Studying (Big) Data (58 pages)

- a. Danah Boyd and Kate Crawford. 2012. CRITICAL QUESTIONS FOR BIG DATA. *Information, Communication & Society* 15, 5 (June 2012), 662–679.
<https://doi.org/10.1080/1369118X.2012.678878>
- b. Yanni Alexander Loukissas. 2019. *All Data Are Local: Thinking Critically in a Data-Driven Society*. The MIT Press. <https://doi.org/10.7551/mitpress/11543.001.0001>
- i. Chapter 1: Local Origins (pg 13-24)
 - ii. Chapter 7: Local Ends (pg 189-196)
- c. Audrey Desjardins, Jena McWhirter, Justin Petelka, Chandler Simon, Yuna Shin, Ruby K Peven, and Philbert Widjaja. 2023. On the Making of Alternative Data Encounters: The Odd Interpreters. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*. Association for Computing Machinery, New York, NY, USA, Article 155, 1–20.
<https://doi.org/10.1145/3544548.3581323>

B. Studying Algorithms (41 pages)

- a. Nick Seaver. 2017. Algorithms as culture: Some tactics for the ethnography of algorithmic systems. *Big Data & Society* 4, 2 (December 2017), 1-12.
<https://doi.org/10.1177/2053951717738104>
- b. Safiya Umoja Noble. 2018. *Algorithms of oppression: How search engines reinforce racism*. New York University Press. Introduction (pgs 1-14)
- c. Lucian Leahu. 2016. Ontological Surprises: A Relational Perspective on Machine Learning. In *Proceedings of the 2016 ACM Conference on Designing Interactive Systems (DIS '16)*. Association for Computing Machinery, New York, NY, USA, 182–186.
<https://doi.org/10.1145/2901790.2901840>
- d. Laura Devendorf and Kimiko Ryokai. 2015. Being the Machine: Reconfiguring Agency and Control in Hybrid Fabrication. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. Association for Computing Machinery, New York, NY, USA, 2477–2486. <https://doi.org/10.1145/2702123.2702547>
- i. OR, we can watch part of Laura’s talk “Weaving algorithmic patterns with AdaCAD”:
<https://www.youtube.com/watch?v=kKQs0bVuN-8&t=328s> (From 5:30 to 21:15)

C. Optional

- a. Bowker (2013) *Data Flakes – an Afterword to Raw Data is an Oxymoron*
- b. Paul Dourish. 2016. *Algorithms and their others: Algorithmic culture in context*. *Big Data and Society* 3, 2 (2016), 1–11. <https://doi.org/10.1177/2053951716665128>
- c. Safiya Umoja Noble. 2018. *Algorithms of Oppression*. Chapter 1: A Society, Searching (pgs 15-63)
- d. Michael A. Madaio, Luke Stark, Jennifer Wortman Vaughan, and Hanna Wallach. 2020. *Co-Designing Checklists to Understand Organizational Challenges and Opportunities around Fairness in AI*. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–14.
<https://doi.org/10.1145/3313831.3376445>
- e. Emily M. Bender, Timnit Gebru, Angelina McMillan-Major, and Shmargaret Shmitchell. 2021. *On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?* In *Proceedings of the 2021*

ChatGPT/AI Tools Policy

I want to acknowledge that we are still in a period where there are not clear norms about how to use ChatGPT and similar AI tools. This policy may get updated over the semester as we all learn about different uses of these tools, or encounter them in new situations.

Assignments are a form of communication. The assignments in this class are meant to be opportunities for you to show me how well you're meeting the course objectives (of being able to analyze, critically think, or apply new skills). And the assignments provide an opportunity to evaluate how well you are meeting those course objectives, so that I can give you feedback to improve, and so I can adjust my teaching as we go along. Using automated tools to do most of the assignment for you break that feedback loop – instead of these assignments being a communication mechanism between us, they just become more busy work that doesn't mean anything (which none of us should want!)

ChatGPT and AI tools are based on matching patterns on past materials, and they're not actively thinking/reasoning like a human does. (A metaphor: if you asked me to design a bridge without any engineering training, and I drew up some blueprints based on a bunch of designs of bridges through Google, it might look pretty cool and it might even stand up! But we probably wouldn't build that exact bridge because I didn't follow any of the reasoning and requirements that's been developed in structural and civil engineering).

Assignments in this class may not always feel straightforward (that's the nature of research!). There can be temptation to turn to an automated AI tool as soon as you hit a challenge. It's ok to sit for a while and be unsure, or work on something else for a while and come back, or talk to a person. I'd rather you talk to your peers first for ideas and brainstorming before turning to ChatGPT. (In the same way that you'll get richer research data by talking to real people than talking to a ChatGPT persona; you'll get richer research ideas by talking to real people instead of talking to ChatGPT!).

That being said, I know that tools like ChatGPT can be useful for certain types of tasks, or as resources to help in writing. Therefore, **every assignment must include a ChatGPT & AI Use statement at the end** (approximately 100 words) describing if and how you used ChatGPT as part of the assignment. If you did use it, you should include a couple sentences specifying what you did, reflecting on what you think worked well and what worked less well, as well as any strategies you tried in your prompts.

In general, you will not be penalized for using ChatGPT and AI tools if you disclose how you used it (however, low quality assignments will still receive lower grades). However, writing a false statement about your use of ChatGPT & AI tools, or turning in a document that was completely written by ChatGPT or an AI tool are likely violations of the academic honor code (plagiarism, false claims of performance, deliberate falsification), and will result in a 0 grade and a possible referral to the Office of Student Integrity.

Use of ChatGPT and AI tools is a large gray zone – the following are not 100% rules, but some suggestions and guidelines to help you use these tools in a way that will be helpful to you achieving the course goals and objectives.

Likely useful ways of using ChatGPT:

- Helping to re-word or re-structure a sentence or paragraph to help you more clearly convey an idea
- Translating languages (you may need to double check manually for errors)
- Finding a specific resource/paper you already know about but can't remember the name of
- Providing a template for a paragraph
- Asking it to critique your writing
- Cut down words you've written to meet a word count or page limit.
- Brainstorming (along with other techniques of brainstorming, some of which we will discuss in class)

Likely non-useful ways of using ChatGPT:

- Writing the assignment for you and turning it in – this is likely a violation of the academic honor code and will be dealt with as such
- Citing factual statements from ChatGPT – ChatGPT can “hallucinate,” or create very convincing sounding facts and citations, and passing them off as real
- Finding new sources and papers – the hallucination problem again
- Using ChatGPT as a general search engine – the hallucination problem again

Course Expectations and Guidelines

A note on COVID-19

I want to acknowledge that we are still in a dynamic and what can feel like a precarious time. I will strive to create a stimulating learning environment, although there may be uncertainties or complications that arise during the course that will require flexibility and mutual trust. Do not hesitate to contact me if there is anything you would like to discuss at any point during the course. Please communicate with me if a situation arises that will require flexibility and we can adjust as needed. If you feel ill, please stay home if you feel sick, to protect yourself and others.

For our in-person class meetings, I will likely be wearing a high-quality N/KN-95 mask and have additional masks available should anyone want to use one. The University System of Georgia encourages people to wear masks based on their preference and assessment of personal risk. In addition, if interested, students can contact Stamps Health Services for information about scheduling a Covid-19 vaccine and/or booster.

Due Dates and Late Policy

For late submissions, one half point will be deducted for every late day (0.5 point for up to 24 hours late, 1 point for up to 48 hours, etc), up until half credit.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards and to follow the [Georgia Tech Academic Honor Code](#).

Accommodations

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Attendance

Participation in this class is important so that we can explore and understand the readings together. Your attendance is important; however I acknowledge we live in uncertain times. Any absences due to health reasons and personal or family emergencies will be excused. Stay home if you feel sick, to protect yourself and others. Please communicate with me in advance if you will be missing a class.

3 unexcused absences are allowed (you do not need to provide any specific reason – but it may include a job/internship interview, needing to do a presentation for another project, or other activities that conflict with class). However additional unexcused absences will lower the student’s overall grade by 1% each time. If you feel that you are falling behind due to an illness, emergency, or other reason, please come see me and we can make a plan for alternate arrangements.

Student-Faculty Expectations Agreement

At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See <http://www.catalog.gatech.edu/rules/22/> for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek.

Statement on Inclusivity and Diversity

The Ivan Allen College of Liberal Arts supports the Georgia Institute of Technology's commitment to creating a campus free of discrimination on the basis of race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity, or veteran status. We further affirm the importance of cultivating an intellectual climate that allows us to better understand the similarities and differences of those who constitute the Georgia Tech community, as well as the necessity of working against inequalities that may also manifest here as they do in the broader society.

Additional Resources

If you are experiencing anxiety or depression or a medical, personal, or family crisis, or if you just feel overwhelmed, please do not hesitate to reach out for help. Everybody needs help sometimes, and college can be a personally challenging time. You are not alone, and many of us 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 has a list of services (see <https://studentlife.gatech.edu/content/get-help-now>). If you are the victim of sexual misconduct or harassment, resources are listed at: <https://diversity.gatech.edu/equity-compliance/reporting-options/i-want-report-incident>. VOICE Advocates also serve as confidential resources for victim-survivors (speaking to them does not trigger an official reporting process): <https://wellnesscenter.gatech.edu/voice>

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