

LMC 3314 Technologies of Representation

Prerequisite

ENGL 1102

Instructor

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Office hours: By appointment only.

This syllabus is subject to change at the discretion of the instructor.

Course overview

This course explores technologies of representation. How do technologies represent the world and all the complex diverse living phenomena within it, and how do those representations in turn reshape and impact the world and ourselves?

Goals and objectives

The projected learning goals are that students learn to

- Critically analyze different forms of representation for what they emphasize or what they obscure or leave out
- Creatively construct different forms of representation for different purposes
- Discuss with peers as a way of developing their thoughts, respectfully while also exploring unfamiliar concepts
- Work effectively in teams

Schedule

Date	Topic	Read / Due before start of class
Tue May 13	Course overview	

Thu May 15		<ul style="list-style-type: none"> • Shannon – Mathematical Theory of Communication (skim for context) • Shannon – Bandwagon
Tue May 20		<ul style="list-style-type: none"> • Nafus – Introduction – Biosensing Technologies in Everyday Life
Thu May 22		<ul style="list-style-type: none"> • Elsden et al. - Fitter, happier, more productive: what to ask of a data-driven life • Dear Data Project
Tue May 27		<ul style="list-style-type: none"> • Elsden et al. - Designing Documentary Informatics
Thu May 29	Bank Holiday – no class	
Tue Jun 3	Representations Presentations	
Thu Jun 5		<ul style="list-style-type: none"> • Verbeek - Materializing Morality: Design Ethics and Technological Mediation
Tue Jun 10		<ul style="list-style-type: none"> • Boehner - Reflections on representation as response • Boehner - How emotion is made and measured
Thu Jun 12		<ul style="list-style-type: none"> • Glissant – For Opacity
Tue Jun 17		<ul style="list-style-type: none"> • Howell et al. - Emotional Biosensing: Exploring Critical Alternatives
Thu Jun 19	Representations Presentations	
Tue Jun 24		<ul style="list-style-type: none"> • D'Ignazio & Klein – Data Feminism: Introduction: Why Data Science Needs Feminism
Thu Jun 26		<ul style="list-style-type: none"> • D'Ignazio & Klein – Data Feminism: Chapter 1: The Power Chapter
Tue Jul 1		<ul style="list-style-type: none"> • D'Ignazio & Klein - Data Feminism: Chapter 3: On Rational, Scientific, Objective Viewpoints from Mythical, Imaginary, Impossible Standpoints
Thu Jul 3		<ul style="list-style-type: none"> • Benjamin – The New Artificial Intelligentsia
Tue Jul 8		<ul style="list-style-type: none"> • D'Ignazio & Klein - Data Feminism: Chapter 4: What Gets Counted Counts
Thu Jul 10	Representations Presentations	
Tue Jul 15		<ul style="list-style-type: none"> • Leahu et al. - Interactionist AI and the Promise of UbiComp, or, How to Put Your

		Box in the World Without Putting the World in Your Box
Thu Jul 17		<ul style="list-style-type: none"> Leahu et al. - Ontological Surprises: A Relational Perspective on Machine Learning
Tue Jul 22	Class Review & Wrap-Up	
Thu Jul 24	No class	
Tue Jul 29	No class	
Thu Jul 31	No class	
... Aug 5	Instructor must submit final grades	

Policies and Resources

Participation and Attendance

Class attendance and participation is mandatory*.

Participation throughout the semester is part of the final grade for this class. Students are expected to participate in discussions and in giving and receiving feedback on their work with their peers. Students should try to foster a supportive, inclusive, welcoming space for all their peers to participate in - this might mean talking a little more or talking a little less than your default.

Participation in class discussion is imperative because it allows you to explore the concepts collaboratively, and in the process, discover meanings and issues that you probably would not discover on your own. Participation in class also challenges you to continuously question, refine, and articulate your own ideas and interpretations.

There will be ways to participate on a smaller scale through smaller groups too. Part of participation is also helping make the class a supportive community for your peers to share their tentative thoughts.

*Stay home and rest if you are sick! This is important for your health and the health of everyone else in the classroom. Please send an email to the instructor and GTA to let us know.

Information for Students with Disabilities

Students with disabilities at Georgia Institute of Technology will find programs designated to coordinate academic accommodations and promote access to all phases of university life. Such programming is coordinated through the ADAPTS-Disability Services.

The ADAPTS-Disability Services Program is a functional part of the Office of the Dean of Students. ADAPTS-Disability Services Program personnel oversee and coordinate programs to ensure accessibility to students with disabilities on an individual basis. The Georgia Institute of Technology strives to provide equal access to a college education as well as support to students with disabilities in their experience in the university community.

More information is available at: <http://disabilityservices.gatech.edu/>

Statement on Inclusion 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 broader society.

We may discuss topics that challenge you to re-evaluate your assumptions or beliefs, which some people may find uncomfortable. Our classroom environment may not always be comfortable, but we all have a shared responsibility to ensure that our classroom environment is always **respectful**.

Mental health resources

Your health is more important than this class. 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 being in school 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. Here is a list of resources: <https://studentlife.gatech.edu/content/get-help-now>.

Writing and speaking support at the Communication Center

Alumni consistently emphasize the value of presentation skills for success in digital media careers. Everyone is encouraged to maximize their writing and speaking skills so that you can best convey your great thoughts and ideas. The Communication Center (<https://www.commlab.gatech.edu/home>) offers student support for communication skills. You have great thoughts and ideas, and communication skills can help you effectively share them with others.

Sharing of work

Participation in the course implies permission for sharing your work done in this class with others:

1. In this class, for presentations, feedback, and critique – with your name associated with the work
2. With future students, if your work is a good example that can help other students learn – without your name associated with the work
3. In a public teaching portfolio for the instructor and/or GTA, to showcase the wonderful outcomes of the course – without your name associated with the work

If you are not comfortable with this for any reason, please let me know. I will respect your wishes regarding #2 and #3. I am not able to accommodate assignment privacy for #1 for pedagogical reasons, so please make sure that any work you turn in, you are comfortable sharing with the entire class. Unless I am informed by you in writing (email) that you do not want your work shared with others, I will assume that it is permissible to share your work in ways #1, #2, and #3 above. Also, let me know if you DO want your name shared in cases #2 and #3. I err on the side of protecting student privacy, but I am more than happy to give credit where credit is due.

Honor Code Statement

Students are expected to adhere to the Georgia Tech Honor Code (<https://policylibrary.gatech.edu/student-life/academic-honor-code>).

Have you heard the saying, "Good artists borrow, great artists steal?"

Don't steal anyone's work.

Do get inspiration from other people's work, and adapt it in your own way to make it your own by adding some of yourself to it.

Do cite your sources. You can cite your classmate's sketch from last week. You can cite some example code you found online. You can cite our wonderful TA who helped you figure something out. You can say you got help from a classmate. But be clear about what parts you took from someone else, and what parts you changed or added. Scholars are always building on others' work and citing others' work.

In this class, you are required to give credit to others by citing their work.

Generative AI Tools Policy

Assignments are a form of communication. The assignments in this class are meant to be opportunities to demonstrate and evaluate your learning. They enable receiving useful feedback from peers and the instructor, to help you learn and improve on your skills and work. **Using automated tools to do most of the assignment for you can break that feedback loop, transforming the assignments from useful to busy work – Ultimately this is just harming *your* learning, wasting *your* educational opportunity in this program.**

Generative AI tools are based on matching patterns on past materials. They are 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 have been developed in structural and civil engineering. In fact, building that bridge might be extremely dangerous, and turning in that bridge design for an assignment might deserve a failing grade.)

Assignments in this class may not always feel straightforward, because learning to think through these kinds of assignments is part of getting a top-notch education! 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.

That being said, I know that tools like ChatGPT and generative AI can be useful for certain types of tasks, or as resources to help in writing. Therefore, for any assignment for which you use ChatGPT or any other generative AI, you must both (1) cite the tools you use, as you would cite a research paper or other resource that you used in your work, and (2) add a section titled "Generative AI Usage" documenting how you used the tool(s). Include transcripts of LLM text or dialogues, and any iterations of generative image, sound, or other

media from/with AI, etc., to thoroughly document your process of using generative AI in producing the output of your project.

In general, you will not be penalized for using ChatGPT and other generative AI tools **if you disclose how you used it**. Of course, low quality assignments will still receive lower grades. However, writing a false statement about your use of ChatGPT or other generative 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.

Likely useful ways of using generative AI:

- 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, then referring to the original source
- 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.

Likely counterproductive ways of using generative AI:

- 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 convincing sounding facts and citations, and pass them off as real
- Finding new sources and papers – the hallucination problem again
- Using ChatGPT as a general search engine – the hallucination problem again, plus the normative biases of what ChatGPT has in its training data vs. what is left out
- Brainstorming – Generative AI tools are trained based on examples from the real world; they are just rehashing examples of what they have previously seen in the real world; thus they are inherently normative. Brainstorming with a generative AI tool is a great way to come up with a lot of tired old ideas that have already been shared a million times. Your goal in brainstorming is to come up with many ideas in the hopes of finding some interesting and relatively unique ideas, based in the collective or individual perspectives of you and your teammates and all the contextual knowledge you have built up about what makes sense for the project you all are doing.

Remember, your perspective and voice matter, and your mind, body, and emotions offer exquisitely complex and sophisticated capabilities that you can use to do things no generative AI can do. In this class, I would much rather you put forth a unique, interesting, and flawed piece of work, and your own sincere perspective and in-progress thoughts, rather than aiming for something generically normatively 'good' with generative AI tools.

Please also refer to Georgia Tech Office of Information Technology's AI guidelines and policies: <https://oit.gatech.edu/ai>