INFOSCI 103

# Computation, Society & Culture

**Session 2, 2024-25**

**Course meeting time:** Tuesday & Thursday 12:00pm – 2:30pm
**Course meeting location:** LIB 2113
**Course format:** Lecture & seminar
**Academic credit:** 4

## Instructor's information

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I am an Assistant Professor of Political Science and Computational Social Science at DKU. My research revolves around the application of statistics and machine learning methods to social science data, especially text, images and audio. The substantive focus of my research is political advertising.

**Getting in touch with me**
Feel free to send me an email about any questions you may have. Make sure the subject line contains 'INFOSCI103'. During the week, I will try to respond within 24 hours. If you don't receive a response in that time, feel free to email me again. You can also come to my office hours, or make an appointment if the office hours times don't work for you.

## What is this course about?

This course explores the evolving relationship between computation and society. From algorithms shaping social behavior to the far-reaching impacts of artificial intelligence and big data, we examine how computational technologies influence and are influenced by societal norms, politics, and culture. We'll also compare how these interactions differ across regions, including the US, China, Europe, and other parts of the world. The course spans areas such as social media dynamics, privacy in the digital age, misinformation, and the rise of automation, all while emphasizing the ethical, environmental, and cultural dimensions of technological advancement.

Key topics include:

- Social Computing and Algorithmic Influence

- Digital Advertising, Privacy, and Surveillance
- Misinformation
- The Risks, Biases, and Transformations of AI, Big Data, and Automation

Through an interdisciplinary lens, we'll interrogate how technology shapes our social realities, identify the risks and opportunities of these changes, and consider possible frameworks for mitigating negative outcomes while enhancing human collaboration and innovation.

## What background knowledge do I need before taking this course?

Because this is a 100-level course, no prerequisite course or background knowledge is required.

## What will I learn in this course?

By the end of this course, you will be able to:
- Identify and describe the benefits and drawbacks of computational technologies in society and culture.
- Analyze how computational technologies influence, and are influenced by, societal and cultural factors.
- Critically evaluate the ethical implications of emerging technologies.
- Develop solutions to societal and cultural challenges using computational tools and technologies.
- Read academic articles on the social and cultural impacts of computation and identify their importance in the broader literature as well as their real-world implications.

## What will I do in this course?

- Participate and engage in class discussion and activities.
- Write mini essays that go beyond summarizing the readings, offering your own critical reflections and insights.
- Conduct a case study on a selected reading and present your findings to the class.
- Collaborate on a group final project, exploring the work of a scholar (from the instructor's list) whose research is relevant to the course.

## How can I prepare for the class sessions to be successful?

You will be successful in this course if you:

- Take notes on the readings and come to class prepared with questions or insights.
- Actively contribute to class discussions by sharing your ideas, asking questions, or responding to others' points.
- Collaborate with classmates by dividing tasks equally, sharing ideas openly, and respecting each group member's input.
- Use assignment rubrics to guide your work and tailor your submissions, and incorporate rubric feedback to improve future assignments.
- Contact me whenever you need help or have questions.

## What required texts, materials, and equipment will I need?

There are no required textbooks for this course. All readings will be available through DKU/Duke Libraries, uploaded to Canvas, or freely available on the web.

## How will my grade be determined?

**Participation (15%):**
Your participation grade is based on both attendance and active engagement during class. Class sessions will include lectures, discussions on assigned readings, student presentations, and in-class activities—all offering opportunities for you to contribute.

To help you prepare for discussions of the readings, you'll receive discussion questions in advance (posted on Canvas before class). Be sure to complete the readings and be ready to engage with these questions. During student presentations, you'll have the chance to ask thoughtful questions during the Q&A section.

In-class activities may include debates, group discussions, brainstorming sessions, and presentations, where you'll collaborate with peers before sharing your ideas with the class. Questions and contributions related to lecture content are always welcome.

**Mini-Essays (15%):**
Every student gets to pick three (and only three) days on which they post a mini-essay about one of the day's readings on the Canvas forums (so other students can draw inspiration for their own essay). This essay should not summarize the reading, but rather make one interesting and original argument about it.

**Case Study Presentation (20%):**
Each student will be randomly assigned one of the readings from the instructors' list and will present a case study on that research. You'll summarize this specific work and share your critiques of this work with the class under the framework below:
- **What** is this research about? What computational technologies are used? What is the gap/problem that this research is trying to resolve? What theories does this research examine or apply?
- **How** does this research address their problem(s)? How are computational media or tools employed in the research?
- **So What.** What contributions does this research make?
- **Ethics.** Do the researchers and their work have any ethical considerations? If yes, how do they deploy ethics in their work? If not, what ethical considerations should they have?

**Group Final Project (50%):**
You'll undertake a group project (2-4 students per group) and analyze one computational technology from the course topics. You will focus on the work of a leading scholar and explore the literature to which they have contributed. This group project will be broken down into four assignments. You will submit a mini-literature review in week 3, a full literature review in week 5, give a presentation in week 7, and finally turn in a study design that proposes to build on the literature that you've studied. The final group project factors into the course grade as following:
> Part 1 – Mini-Literature Review (5%)

Part 2 – Full Literature Review (15%)
Part 3 – Presentation (15%)
Part 4 – Study Design (15%)

The writings that you turn in should be presented professionally with grammatical correctness and clarity. You will be judged on your originality, innovativeness, quality of writing, and accuracy. Further details will accompany each assignment.

**Grade scale:**
A+= 98% - 100%; A = 93% - 97.9%; A- = 90% - 92.9%; B+ = 87% - 89.9%; B = 83% - 86.9%; B- = 80% - 82.9%; C+ = 77% - 79.9%; C = 73% - 76.9%; C- = 70% - 72.9%; D+ = 67% - 69.9%; D = 63% - 66.9%; D- = 60% - 62.9%; F = 59.9% and below.

For final grades, .05 is rounded up. For example, a 92.94999 is an A-, a 92.95 is an A. Grades are non-negotiable and can only be changed due to an error in calculation or transcription.

Don't trust Canvas' grade calculation – if you want to know what your current grade is, calculate it yourself.

## What are the course policies?

**Generative AI Guidelines and Policy**
Generative AI (including ChatGPT and Quillbot, as well as numerous tools in media and art) is a novel technology to which higher education is learning to adapt. In this course, **the use of generative AI is explicitly allowed**, but still governed by DKU's rules:
- Use of these tools is governed by DKU's Academic Integrity Policy, and students must employ this technology consistent with expectations of the instructor, course, or assessment.
- In any situations in which such tools are used (with or without permission) in the process of completing assignments, students are obliged to cite fully any use of generative AI tools in the formulation of their work, including by preserving a record of the use of the tool as original source material.
- Students should be encouraged to save all rough drafts and notes for papers, in case any concerns arise.

DKU also has a licensed version of ChatGPT that you can (but don't have to) use.

**Late Penalties**
This course will move quickly so therefore it is imperative that you do not fall behind by submitting late assignments. Assignments will be subject to a 30% late penalty for each portion of a day they are overdue past the deadline. For example, if an assignment is submitted 6 hours late, which is equivalent to 1/4th of a day, it will incur a penalty of 7.5% (0.25 * 30%). Rescheduling of assignment due dates will only be permitted for serious medical and personal matters, **and requires advance notice**. Unless stated otherwise, all assignments are due at 11:59pm China time.

**Class Attendance**
As outlined in the University Bulletin, regular and punctual class attendance is expected. Absences will only be excused for serious medical and personal matters. If you will be absent from a class for a university-sponsored activity, please make arrangements with me — beforehand — regarding any work you might miss.

## Discussion Guidelines:

Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor. Active interaction with peers and your instructor is essential to success in this course, paying particular attention to the following:

- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.
- Read your online discussion posts carefully before submitting them.

## Academic Integrity:

As a student, you should abide by the academic honesty standard of the Duke Kunshan University. Its Community Standard states: "Duke Kunshan University is a community of individuals from diverse cultures and backgrounds. We are dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Members of this community commit to reflecting upon and upholding these principles in all academic and non-academic endeavors, and to protecting and promoting a culture of integrity and trust." For all graded work, students should pledge that they have neither given nor received any unacknowledged aid.

## Academic Policy & Procedures:

You are responsible for knowing and adhering to academic policy and procedures as published in University Bulletin and Student Handbook. Please note, an incident of behavioral infraction or academic dishonesty (cheating on a test, plagiarizing, etc.) will result in immediate action from us, in consultation with university administration (e.g., Dean of Undergraduate Studies, Student Conduct, Academic Advising). Please visit the Undergraduate Studies website for additional guidance related to academic policy and procedures.  Academic integrity is everyone's responsibility.

## Academic Disruptive Behavior and Community Standard:

Please avoid all forms of disruptive behavior, including but not limited to: verbal or physical threats, repeated obscenities, unreasonable interference with class discussion, making/receiving personal phone calls, text messages or pages during class, excessive tardiness, leaving and entering class frequently without notice of illness or other extenuating circumstances, and persisting in disruptive personal conversations with other class members. Please turn off phones, pagers, etc. during class unless instructed otherwise. Laptop computers may be used for class activities allowed by the instructor during synchronous sessions. If you choose not to adhere to these standards, I will take action in consultation with university administration (e.g., Dean of Undergraduate Studies, Student Conduct, Academic Advising).

## Academic Accommodations:

If you need to request accommodation for a disability, you need a signed accommodation plan from Campus Health Services, and you need to provide a copy of that plan to me. Visit the Office of Student Affairs website for additional information and instruction related to accommodations.

## What campus resources can help me during this course?

### Academic Advising and Student Support
Please consult with the instructor about appropriate course preparation and readiness strategies, as needed. Consult your academic advisors on course performance (i.e., poor grades) and academic decisions (e.g., course changes, incompletes, withdrawals) to ensure you stay on track with degree and graduation requirements. In addition to advisors, staff in the Academic Resource Center can provide recommendations on academic success strategies (e.g., tutoring, coaching, student learning preferences). All ARC services will continue to be provided online. Please visit the Office of Undergraduate Advising website for additional information related to academic advising and student support services.

### Writing and Language Studio
For additional help with academic writing—and more generally with language learning—you are welcome to make an appointment with the Writing and Language Studio (WLS). To accommodate students who are learning remotely as well as those who are on campus, writing and language coaching appointments are available in person and online. You can register for an account, make an appointment, and learn more about WLS services, policies, and events on the WLS website.

### IT Support
If you are experiencing technical difficulties, please contact IT:

- China-based faculty/staff/students 400-816-7100, (+86) 0512- 3665-7100
- US-based faculty/staff/students (+1) 919-660-1810
- International-based faculty/staff/students can use either telephone option (recommend using tools like Skype calling)
- Live Chat: https://oit.duke.edu/help
- Email: service-desk@dukekunshan.edu.cn

It is recommended that you familiarize yourself with DKU's VPN and proxy, since these may enable you to access resources you might be unable to reach otherwise. When using the VPN, you will usually want to select Duke VPN (portal.duke.edu), then INTL-DUKE.

## What is the expected course schedule?

(1)    2024-10-22    Course Overview

(2)    2024-10-24    Technology & Computation

**Readings**

*Do Artifacts Have Politics?*

(3)    2024-10-29    Social Computing – Algorithms & Recommendations

**Readings**

*Algorithm-mediated social learning in online social networks*

*Trick and Please. A Mixed-Method Study On User Assumptions About the TikTok Algorithm*

(4)    2024-10-31    Social Computing – Social Media

**Readings**

*Appearance-based Social Comparison on Instagram*

*No evidence that Chinese playtime mandates reduced heavy gaming in one segment of the video games industry*

(5)    2024-11-05    Internet 1 – Digital Advertising

**Readings**

*Programmatic Advertising*

*What Digital Advertising Gets Wrong*

*Advertising is obsolete – here's why it's time to end it*

(6)    2024-11-07    Internet 2 – Privacy

**Readings**

*How privacy's past may shape its future*

*Beyond surveillance capitalism: Privacy, regulation and big data in Europe and China*

(7)    2024-11-12    Misinformation 1 – Scientific Misinformation

**Readings**

*Science, misinformation, and the role of education*

*The efficacy of Facebook's vaccine misinformation policies and architecture during the COVID-19 pandemic*

| (8) | 2024-11-14 | Misinformation 2 – Political Misinformation |

**Readings**
*Psychological Underpinnings of Post-Truth in Political Beliefs*

*False memories of fabricated political events*

| (9) | 2024-11-19 | AI & Big Data 1 – Generative AI |

**Readings**
*We Have No Moat, And Neither Does OpenAI*

*Generative AI meets copyright*

| (10) | 2024-11-21 | AI & Big Data 2 – Risks, Costs & Other Applications |

**Readings**
*Excerpts from "Superintelligence – Paths, Dangers, Strategies"*

*The mounting human and environmental costs of generative AI*

| (11) | 2024-11-26 | AI & Big Data 3 – Machine bias |

**Readings**
*Machine Bias*

*Quantifying ChatGPT's gender bias*

*The TESCREAL bundle: Eugenics and the promise of utopia through artificial general intelligence*

| (12) | 2024-11-28 | Automation |

**Readings**
*Meaningful measures of human society in the twenty-first century*

*The Robotics Revolution*

| (13 & 14) | 2024-12-03 2024-12-05 | Final Project Presentations |

## Final project deadlines

| (1) | 2024-11-10 | Mini-Literature Review |
| (2) | 2024-11-24 | Full Literature Review |
| (3) | 2024-12-03 2024-12-05 | Presentation |

(4)     2024-12-09     Study Design