

DSA 440/CS540 - DATA AND ARTIFICIAL INTELLIGENCE (AI) ETHICS

Spring 2025

Instructor:	Dilara Keküllüoğlu	Email:	dilara.kekulluoglu@sabanciuniv.edu
Time:	M 10:40-12:30, W 15:40-16:30	Place:	M FENS L045, W UC G030 (Cinema Hall)

TAs: Özgün Yargı, Nazlı Bıyıklı, Nisa Defne Aksu

Office Hours:

Dilara Keküllüoğlu Tuesday 15:30-16:30 FENS 1089

Özgün Yargı Wednesday 9:30-10:30 <https://sabanciuniv.zoom.us/j/94821472651>

Nazlı Bıyıklı Tuesday 13:30-14:30 <https://calendar.app.google/dPEvF7YnRUEyXWz5A>

Nisa Defne Aksu Tuesday 8:40-9:30 <https://sabanciuniv.zoom.us/j/5905024125?pwd=gbvrihHNzhwG>

You can also come visit the instructor in their office by appointment through email. Please add DSA440/CS540 in the subject in your emails so we do not miss them.

Main Reference: No main reference. There will be open access articles and tools as references, shared every week.

Contents: Artificial Intelligence systems have become increasingly involved in our lives. These systems can be used in relatively low-stakes decision making such as recommender systems but they are also used in medical contexts too. More recently, the wider public utilize generative AI tools such as ChatGPT and Midjourney to write documents, reports, and emails, or create pictures, and logos to use in various ways. All of these introduce ethical challenges with implications for data ethics, privacy, bias, sustainability, and so on. This course will introduce the ethical implications of artificial intelligence to the students. We will also discuss our role in this and how to take steps to minimize harm as people working with big data and AI (e.g. future researchers, software engineers, or analysts).

Learning Objectives: This course aims to give an introduction to artificial intelligence ethics. A student who successfully fulfills the course requirements will be able to:

1. **describe** ethical issues surrounding collection and use of data
2. **explain** concepts around AI ethics such as fairness, accountability, transparency, privacy, and sustainability.
3. **assess** AI systems according to the ethical AI principles
4. **design** AI systems with ethical AI principles in mind

Course Outline: We will discuss the following topics in the course.

- Introduction to Artificial Intelligence and Its Use
- Data Ethics
- Big Data and Large AI Models
- Privacy
- Bias in AI Systems
- Fairness, Accountability, and Transparency
- Explainability, Contestability, and Answerability
- Human Oversight on AI
- Applied AI Ethics
- AI Use in High-Stake Domains (Healthcare, Government, Education)
- AI in Business
- AI Policies and Governance around the World
- Sustainability and Impact on Environment

Grading Policy: Active Participation (25%), Take-Home Assignments (20%), Group Project (25%), Midterm Exam (30%).

Important Dates:

Midterm	Week 11
Project Deadline	Week 14

Class Policy:

- Regular attendance is essential and expected. Attendance will be taken but will not count towards your final grade. Active participation will be measured by TopHat questions and case study exercises in-class.
- Reading list will be provided for each week. I expect that essential reading will be done before coming to the lecture. Discussion will be based on these readings. Midterm will have questions from the readings.
- You have three points you can use for late submissions. Every day you are late for an assignment will remove a point from your balance. You can use these three points as you wish for the take-home assignments. If you do not have any points left, you will receive zero marks for missed deadlines.
- Late submissions are not accepted for the project deadlines.

Grading:

- Midterm exam, take-home assignments, active participation, and the group project will be counted for the last letter grade.
- Letter grades will be assigned based on curve, considering the distribution of the grades in the class.

- Any one of the followings lead to failing the course: (1) overall total grade below 40 (over 100), (2) midterm exam grade below 30 (over 100).

Academic Honesty: All students must follow the university guidelines of academic integrity. <https://www.sabanciuniv.edu/en/academic-integrity-statement>

Flexibility: The contents of the syllabus are subject to change. The students will be notified when there is an update.