

AI in Media and Society

JOU 3365 | Fall 2022 | Section 26465 (AI01)

Lecture: **Monday**, period 7 (1:55–2:45 p.m.)

Class discussion and in-class projects: **Wednesday**, periods 7 & 8 (1:55–3:50 p.m.)

Instructor: Mindy McAdams, Professor, Department of Journalism

Email: mmcadams@ufl.edu

Office: 3049 Weimer Hall

Office hours: Thursday 1–3 p.m. in my office | and by appointment

Office phone: (352) 392-8456 (NOTE: Email is better. Much better.)

Website: UF Canvas LMS

Course Description

Gain an understanding of artificial intelligence and machine learning as they apply to the media professions, including journalists reporting on AI. Explore major developments in AI technologies as covered by the mass media. Learn to detect hype and exaggeration in descriptions of AI's promises and potential risks and dangers. Examine use of AI systems in finance, healthcare, hiring decisions, housing, policing, etc.

Prerequisites: None

Weekly topics: See page 6, "Course Schedule and Required Work."

Course Objectives

At the end of the course, students should be able to:

1. Evaluate news reports and corporate claims about AI systems, noting when claims are poorly supported or likely to be exaggerated.
2. Explain how biases come to be "baked into" various AI systems, consequences of AI biases, and how biases could be reduced or eliminated.
3. Describe uses of AI systems in finance, healthcare, hiring decisions, housing, policing and other domains, based on news reports.
4. Differentiate between machine learning and other types of AI.
5. List limitations of trained AI systems used for image recognition and question answering, among other applications.
6. Define and describe fundamental structures related to AI, such as algorithms, models, neural networks.
7. Summarize the idea of artificial intelligence in computer science/mathematics/philosophy (not science fiction).

8. Define and describe common concepts related to AI, such as “AI Spring,” “weak AI,” “artificial general intelligence.”
9. Explain the uses of some well-known datasets used in machine learning such as MNIST and ImageNet.
10. Describe generally the operations and structure of neural networks for tasks involving images or language.

Attendance and Attitude

Students are expected to show respect for one another and for the instructor by arriving before the class starting time. Attendance is taken and participation is expected. If you have been absent, you are responsible for finding out about any missed material by consulting another student and/or going to the instructor’s office hours and/or making an appointment to meet online with the instructor.

Please do not distract yourself during class. Reading and writing text messages, social media posts, email, etc., during class means you will miss things that might affect your grade in the course. Give your full and undivided attention to anyone who is speaking in class, *including your fellow students*. Another student might ask a question that will help you, if you are listening.

Notetaking on paper is highly recommended. Research has shown that our thinking about new ideas and also our retention are improved when we *write* notes about new material rather than typing on a laptop or phone. This applies to material you read as well as lectures and other videos you watch.

UF Attendance Policies

- > <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Course Deadlines and Makeup Work

Late assignments are not accepted unless an emergency can be documented or other contingencies specifically listed in the **UF Attendance Policies** (see link above). This means that an assignment submitted late is graded as a zero. Assignments are not accepted via email unless requested by the instructor. If an illness or a personal emergency prevents you from completing an assignment on time, advance notice and written documentation are required. If advance notice is not possible because of a genuine emergency, written documentation will be required. No work for “extra credit” is accepted.

NOTE: Assignment deadlines in Canvas are usually set for 11:59 p.m. If you submit after the deadline, your assignment is late. Your inability to upload *at the last minute* is not a valid excuse for lateness.

Please note that specific attendance circumstances such as religious holidays, illness, sports, and field trips for other courses are covered under the UF Attendance Policies *linked above*.

Academic Dishonesty

Academic dishonesty of any kind is not tolerated in this course. It will be reported to the student's department chair AND to the university's Dean of Students—and **it will result in a failing grade for this course.** A formal report of the offense will be filed with the university's Dean of Students.

Academic dishonesty includes, but is not limited to:

- Using any work done by another person and submitting it for a class assignment, quiz, or exam.
- Submitting work you did for another class or course.
- Copying and pasting text written by another person without use of quotation marks AND complete attribution, including a URL (online) or page number (print).
- Paraphrasing text written by others, such that it constitutes de facto plagiarism (e.g. word substitutions).
- Sharing answers to exams or quizzes online or with anyone.

UF Student Honor Code

> <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>

Required Book, Videos and More

Students are required to read this book:

Artificial Intelligence: A Guide for Thinking Humans, by Melanie Mitchell (2019)

All students are expected to own or rent their own copy of the book, whether printed or electronic. Either the hardcover or the paperback is acceptable.

Each week, some articles and/or videos will be required reading/viewing. These will be linked in Canvas. There is no fee for these materials. Some might require students to log into the library with the UF VPN.

Course Requirements and Grading Policies

Read this entire document (the syllabus) in the first week of classes. If anything is not clear to you, ask me for clarification before the last day of Drop/Add (Aug. 30, 2022). This syllabus is a contract between you and me.

Please make sure to check the relevant Canvas module early in the week. Plan your work accordingly so you have enough time to absorb the material. All your deadlines are in Canvas.

Quizzes

There will be 13 weekly quizzes, *plus* a syllabus quiz. Quizzes are in Canvas and are always open-book. Quizzes cover the assigned readings/videos for the week. These are always listed in precise detail in the module's "Assigned readings" document in Canvas. Deadlines are in Canvas. Any quiz not submitted by

the deadline is graded 0. *Your lowest quiz grade will be dropped.* If a genuine emergency causes you to miss a quiz, see “Course Deadlines and Makeup Work,” page 2, above, for the policy on makeup quizzes.

Exams

There will be one midterm exam and a final exam. These will require essay answers to demonstrate your understanding of the ideas in the course. **The final exam will be in Finals Week, on Dec. 14.**

Research paper/unpaper

You have a choice: Write a traditional research **paper**, or produce a **project** in another medium (video, infographic, etc.) that requires an equivalent amount of research. Details will be provided in Canvas.

Attendance and participation

Points are accumulated as detailed below. This is 20 percent of your final course grade. **Participation is expected;** you will be working on small assigned projects and small-group discussions during class.

Absences due to illness, serious family emergencies, special curricular requirements, etc., will be handled **in accordance with UF policies**, to which you will find a link on **page 2** of this syllabus.

- In fall 2022, the **lecture** will be *asynchronous*, prerecorded video. Thus no attendance points are attached to the lecture. However, it is expected that the lecture will be viewed and all assigned readings/videos read or watched **BEFORE the second class meeting day each week** (Wednesday).
- The **second class day** each week is where the attendance and participation points come from. This is a *synchronous two-period* meeting, which will be fully in Zoom for fall 2022. **YOU MUST ATTEND IN ZOOM EVERY WEDNESDAY** for the full two periods.
- Your camera must be on. You should be sitting upright (not lounging/lying down). Your appearance should be similar to what it would be in the classroom — that is, your clothes and hair should be appropriate to be seen by your classmates and your instructor. You should be paying attention, not talking to people off-camera in your room. In other words: **Be present.**
- **It is expected you will attend the entire two periods, from 1:55 p.m. until 3:50 p.m., every week.** Attendance for the full time is 1 point. Partial attendance is 0, unless class is dismissed early.
- You will show up in Zoom on time. For chronic lateness—
 - If you have been marked late 4 times or more: –1 point from the total
 - If you have been marked late 8 times or more: –2 points from the total
- Each week, students will be divided into teams. You will be on a different team each week. Small projects and discussion questions will be assigned, and teams will collaborate on these in breakout rooms. Throughout the double period, the full class will come together and then go back into breakout rooms for other work. That is, you will not be in the breakout rooms continuously for the two periods.
- The group’s work will be documented in *one* shared file *such as* [Jamboard](#) or a Google document, which will be submitted in Canvas for grading immediately at the end of the double

period. Instructions will be given each week. If using Google Docs, you are reminded to use the UF Apps version and not the general/public Google Docs version.

- Each team will be assigned a team leader. The team leader is responsible for submitting the shared file. Every student in the class will be a team leader at least once. The team leader is also responsible for encouraging all team members to contribute equally.
- The shared file, which represents your team’s work for one day, is worth up to 3 points. It might earn anywhere from 0 to 3 points. **Quality** is valued over quantity. A rubric is available in Canvas.
- Finally, *each team member* will submit a team checklist at the end of the double period. This is a form, and it is worth 1 point if filled in correctly and completely. In the form, you will list your name and the names of all your team members. You will **rate the contributions of your team leader and all team members**, including yourself. This is an attempt to hold every team member accountable so that everyone participates and division of labor is fair.
- **To summarize, the attendance and participation points for one week are as follows:**
 - 1 point for attending the full two periods.
 - Up to 3 points for a document that represents the work assigned that day.
 - 1 point for your individual team checklist form.
 - That is a total of 5 possible points for each student, each week. If you miss class, you forfeit all 5 points for that day. Subject to **UF Attendance Policies** (see page 2).
- Your lowest-score day will be dropped, allowing you **one absence without penalty**.
- In the midterm week, there are no points for attendance and participation.

Grades

| | |
|------------------------------|-------------|
| Quizzes | 20 percent |
| Midterm exam | 20 percent |
| Final exam | 20 percent |
| Research paper/unpaper | 20 percent |
| Attendance and participation | 20 percent |
| TOTAL | 100 percent |

| | | | |
|---------------|----|--------------------|----|
| 92–100 points | A | 72–77 points | C |
| 90–91 points | A– | 70–71 points | C– |
| 88–89 points | B+ | 68–69 points | D+ |
| 82–87 points | B | 62–67 points | D |
| 80–81 points | B– | 60–61 points | D– |
| 78–79 points | C+ | 59 points or fewer | E |

UF Policies about Student Grades

> <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

UF Dates (Fall 2022)

| | | | |
|---------------|------------|------------|--------------|
| Classes begin | Aug. 24 | Sept. 5 | Labor Day |
| Drop/Add | Aug. 24–30 | Oct. 7–8 | Homecoming |
| Classes end | Dec. 7 | Nov. 11 | Veterans Day |
| Final exams | Dec. 10–16 | Nov. 23–26 | Thanksgiving |

Students with Disabilities

Students requesting accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student, who must then *provide this documentation to the instructor* when requesting accommodations. Accommodations must be discussed in private, not in the classroom.

UF Disability Resource Center

> <https://disability.ufl.edu>

Course Evaluations

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. Students will be notified when the evaluation period opens and can complete evaluations in their Canvas course menu under GatorEvals, or at: <https://ufl.bluera.com/ufl/>

Summary results of these assessments are available to students: <https://gatorevals.aa.ufl.edu/public-results/>

Course Schedule and Required Work

Please note that many important details are in Canvas and do not appear herein. **Additional assigned readings, links to videos, resources, etc., are in Canvas.**

Week 1 | Aug. 24–26

Introduction to the course. Complete the syllabus quiz.

GET THE BOOK. Get started on Week 2 reading and videos.

Week 2 | Aug. 29–Sept. 2

Foundations: The Singularity and General AI. Symbolic AI. Perceptrons and conditioning. The MNIST dataset.

READ Mitchell, Prologue and chapter 1. Other readings/videos as listed in Canvas.

Quiz 1.

Week 3 | Sept. 5–9

Foundations, part 2: Deep learning: layers and weights. Back-propagation. Narrow or “weak” AI. What is *intelligence*? Cycles of AI Winter and Spring.

READ Mitchell, chapters 2 and 3. Other readings/videos as listed in Canvas.

Quiz 2.

Week 4 | Sept. 12–16

Machine vision and object recognition. Convolutional neural networks. Training and classification.

READ Mitchell, chapter 4. Other readings/videos as listed in Canvas.

Quiz 3.

Week 5 | Sept. 19–23

Machine vision and object recognition, part 2. ImageNet. Training data and test data. Common mistakes in object recognition.

READ Mitchell, chapter 5. Other readings/videos as listed in Canvas.

Quiz 4.

Week 6 | Sept. 26–30

What is *learning*? Big Data and AI. The human components in machine learning. Unsupervised learning (vs. supervised). Adversarial attacks — how to fool an AI.

READ Mitchell, chapter 6. Other readings/videos as listed in Canvas.

Quiz 5.

Week 7 | Oct. 3–7

Face recognition and racial and gender bias. Self-driving cars and the long tail. How can AI be regulated?

READ Mitchell, chapter 7. Other readings/videos as listed in Canvas.

Quiz 6.

Week 8 | Oct. 10–14

Midterm review. **This is a synchronous Zoom meeting on Monday, Oct. 10.**

Midterm exam is during the Wednesday class double period.

Week 9 | Oct. 17–21

Robots. Reinforcement learning and Q-learning. How is this different from neural networks?

READ Mitchell, chapter 8. Other readings/videos as listed in Canvas.

Quiz 7.

Week 10 | Oct. 24–28

AI and games. More on reinforcement learning (vs. supervised). Rule-based systems (brute force) and their limitations. Arcade games. Chess. AlphaGo and DeepMind. Monte Carlo tree search.

READ Mitchell, chapter 9. Other readings/videos as listed in Canvas.

Quiz 8.

Week 11 | Oct. 31–Nov. 4

What is implied by the recent successes of reinforcement learning? Comparison of game states and parameters to real-world scenarios. How far off is general AI (AGI)?

READ Mitchell, chapter 10. Other readings/videos as listed in Canvas.

Quiz 9.

Week 12 | Nov. 7–11

Natural language processing. What is *understanding*? Speech recognition. Word vectors. Sequential data and time steps (recurrent neural networks).

READ Mitchell, chapter 11. Other readings/videos as listed in Canvas.

Quiz 10.

Research paper/unpaper proposal due.

Week 13 | Nov. 14–18

Machine translation. Encoding/decoding. How quality of translation is measured. Differences in quality between translated short texts and long(er) texts.

READ Mitchell, chapter 12. Other readings/videos as listed in Canvas.

Quiz 11.

Week 14 | Nov. 21–25

Thanksgiving. No class, no quiz.

Week 15 | Nov. 28–Dec. 2

Question-answering systems. IBM Watson and the *Jeopardy!* Challenge. Use of IBM Watson tech in other domains; failures. Voice assistants (Siri, Alexa, etc.). SQuAD and Winograd schema.

Large language models: GPT-3 and DALL-E 2.

READ Mitchell, chapter 13. Other readings/videos as listed in Canvas.

Quiz 12.

Week 16 | Dec. 5–7

The 7th, Wednesday, is the last day of classes.

Abstraction, analogy, meaning, and metaphor: What AI (still) can't do. Questions that remain.

READ Mitchell, chapters 14, 15 and 16. Other readings/videos as listed in Canvas.

Quiz 13.

Research paper/unpaper due.

Final Exam | Dec. 14

UF scheduled final exam time is **Wednesday**, Dec. 14, starting at **10 a.m.** The exam period is two hours.

Weekly topics are subject to change. Please check in Canvas for the latest updates.

A Note about Office Hours

The link below provides a grid that shows my schedule. All white cells in the grid are open for appointments. Please give me 24 hours to respond to your request, and please send your request in email. Thursday 1–3 p.m. is *drop-in time* — no appointment is needed!

<https://docs.google.com/spreadsheets/d/1coH020Bvzs0-GXV2dQP1B7zUUE2ma0DBRC0iXr24FRY/edit?usp=sharing>

How to Communicate with Me, Your Instructor

For *private communications*, regarding your grades, accommodations for disability, etc., please use email, meet with me in person, or schedule a meeting in Zoom.

- Email directly in our Canvas course is great.
- Email me outside Canvas at mmcadams@ufl.edu — also fine.

Make sure to read all **Announcements** posted in **Canvas**. I will use the Announcements to remind you about deadlines or any changes in class meetings, assignments, etc.

Diversity, Equity & Inclusion

The Department of Journalism in the College of Journalism and Communications embraces a commitment toward an intellectual community enriched and enhanced by diversity along a number of dimensions, including race, ethnicity and national origins, gender and gender identity, sexuality, class and religion. We expect each of our journalism courses to help foster an understanding of the diversity of peoples and cultures and of the significance and impact of mass communications in a global society.

- If you have a name and/or set of pronouns that differ from those that appear in your official records, and you want me to know this, please tell me.
- If something was said (or written) in class — by anyone, including me — that made you feel uncomfortable, please talk to me about it.
- If you feel that your performance in the class is being affected by your experiences outside of class, please don't hesitate to tell me. I want to be a resource for you, and **I'm open to discussing anything that's standing in the way of your success.**
- If you would rather speak with someone outside of the course — Joanna Hernandez, the CJC director of inclusion and diversity, is an excellent resource. You can email her at: jhernandez@jou.ufl.edu

Every student and every person deserves *respect* and *fair treatment*. I expect all students to show respect toward others and treat them fairly, and I always try to do so. If I fall short, you should let me know.

Your Privacy and Class Recordings

Any student-made recording of any class meeting must comply with Florida state law:

<https://www.flsenate.gov/Session/Bill/2021/233/?Tab=BillText>

As in all UF courses, **unauthorized sharing**, publication or uploading to any online platform of recorded materials (or any class materials) is **prohibited**.

Only an in-class lecture may be recorded. **The law states:** “A class lecture **does not include** lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.”

The privacy of all students in the class must be respected by the instructors, teaching assistants and all other students or visitors to the class.

Additional information from UF:

<http://aa.ufl.edu/policies/in-class-recording/>

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