

Human-Centered Artificial Intelligence — 2025

Instructor: Chat Wacharamanatham (to email, see OLAT) Office hours: <https://chatw.ch/h>

Course format: Lecture with in-class exercises

COURSE DESCRIPTION

Artificial Intelligence (AI) is now a building block of computing systems. When developers of AI-powered systems change their algorithms or training data, the system could change its behavior wildly. This dynamic nature makes designing the user experiences of AI-powered systems more difficult than deterministic systems. Beyond the immediate users of such systems, the behavior of the AI-powered systems may impact the lives of other people and society at large. Hence, designing systems with AI is a broader perspective.

In this course, you will learn about the capabilities and limitations of various current AI systems. You will also learn about desirable qualities of AI systems, e.g., effectiveness, fairness, and ethics. You will also learn processes and techniques for designing AI-powered systems. Finally, you will learn about AI's current and potential impacts on users and society and how to study them.

INTENDED LEARNING OUTCOMES

1. Students can explain the capabilities and limitations of current AI systems and their implications for interaction design.
2. Students understand and can critically analyze AI systems in their ethics, fairness, accountability, and transparency aspects.
3. Students can apply a human-centered design process to design the user experience of systems with AI components.
4. Students can explain the implications of AI applications that have an impact beyond their immediate users.
5. Students can identify research methods to study HCI in AI-powered systems

PRIOR KNOWLEDGE

Experiences with the following topics can be helpful, but they are not requirements:

- Human-Computer Interaction (HCI), e.g., Human-Centered Design process, Usability study methods
- Basic programming or computational thinking skills(e.g., functions, iterations, recursions)

WORKLOAD

6 ECTS = ~180 hours of work (including classes, assignments, project, reviews, and the exam)

LEARNING RESOURCES

Reading materials will be made available on [OLAT](#)¹. There's no required textbook for this course.

¹ <https://lms.uzh.ch/auth/RepositoryEntry/17765990530>

SEMESTER PLAN

Lectures are on Wednesday 16:15–18:00, and Thursday 8:00–9:45 at room BIN 0.K.02.

		Content	Hand-in due (13:00)
Wed.	Sep 17	Many People in AIs	
Thu.	Sep 18	AI types and capabilities	
Wed.	Sep 24	— — No class — —	
Thu.	Sep 25	Mental models	
Wed.	Oct 1	— — No class — —	
Thu.	Oct 2	Errors and mistakes	
Wed.	Oct 8	AI Failure modes and nondeterminism	
Thu.	Oct 9	Ethics and AI	Analysis
Wed.	Oct 15	► Self-driving vehicles	
Thu.	Oct 16	Explainability, transparency, and trust	Peer feedback
Wed.	Oct 22	Information visualization	
Thu.	Oct 23	Data lifecycle	Final analysis
Wed.	Oct 29	Data workers	(Project starts)
Thu.	Oct 30	Methods for researching HCAI	
Wed.	Nov 5	Methods for designing HCAI	
Thu.	Nov 6	Biases in AI systems	
Wed.	Nov 12	► Supporting creativity (image, video, and music)	
Thu.	Nov 13	Conversational interfaces	
Wed.	Nov 19	► Supporting knowledge work (e.g., writing, coding)	
Thu.	Nov 20	► Supporting health and accessibility	
Wed.	Nov 26	Anthropomorphism and robots	
Thu.	Nov 27	Artificial general intelligence, consciousness, superintelligence	
Wed.	Dec 3	— — No class — —	
Thu.	Dec 4	Project presentation*	Project report
Wed.	Dec 10	— — No class — —	
Thu.	Dec 11	Project presentation*	

► Lectures marked with ► are the discussions about design issues in specific types of AI systems. They will use the principles you learned in previous lectures

* Each team will be allocated one presentation slot. Attendance at another slot is optional.

ASSESSMENTS

20% Design analysis assignment

50% Project

30% Written exam

The design analysis assignment will be in teams². You will hand in your initial version, give feedback to other teams, revise, and hand in the final version. Due dates are listed in the semester plan. Your work will be assessed on a rubric that includes aspects such as (1) the clarity of the system description, (2) correct usage and understanding of HCAI terms, (3) analytical depth.

The project will be in teams³. The deliverables are a report and a presentation. Due dates are listed in the semester plan. Some groups may develop a software prototype as part of their project, but a successful project does not necessarily require programming. Your work will be assessed on a rubric that includes aspects such as (1) quality of the design, (2) description and justification of the design and methodological choices, (3) clarity of the report, and (4) depth of the reflection. Each team will receive a team grade from the instructor, and it will be adjusted based on how team members rate each other's contributions⁴. An unrelated secret code is Jellyfish.

The written exam will be on 8 January, 8:00–10:00 (AFL F.121⁵). It is a pen-and-paper exam, and no aids are allowed. It will be a mix of single-choice questions and open questions. The exam's content is sampled from all lecture slides (except slides marked explicitly as not in the exam) and all reading homework. Use the Intended Learning Outcomes to guide your preparation. Use the Intended Learning Outcomes to guide your preparation.

POLICIES

- **Participation and attendance:** We will not check your attendance. Students who regularly participate and attend the class tend to be more successful in finding teams for assignments and projects, and perform better in the exam.
- **Feedback vs. assessment:** Before you hand in your work for grading, we organize various occasions for you to receive formative feedback from classmates and the instructor. After the grading, you will receive an assessment based on a set of criteria. Due to a large number of students, the feedback after grading is likely to be less rich than the formative feedback.
- **Assignment hand-ins** are on OLAT under the “Hand-in” section. When the feedback is released, it will be in the “Feedback” section, and you will receive a notification on OLAT.
- **Late hand-in:** After each deadline, there is a grace period during which you can still hand in your work without receiving any penalty. The duration of the grace period is not pre-specified. You are in the grace period as long as you can still upload your work. We will receive no hand-in afterward, and you will receive the grade of 1.0 for that work.
- **Re-grading:** Within one week after you receive the assessment, you may file a written appeal on [this page](#)⁶. Your appeal will be processed at the end of the semester, and you will receive the results together with the final grade of the course.
- Work containing **plagiarism** will result in a grade of 1.0. Please read the plagiarism fact sheet⁷.
- **Learning accommodations** with respect to disability: see information from the faculty⁸
- **Rules for AI tools:** If students use an AI tool or other creative tool to generate, draft, create, or compose any portion of any assignment, they must hand in a statement that (a) credit the tool, (b) identify what part of the work is from the AI tool and what is from themselves, and (c) briefly

² The number of members will be announced around week 3. We anticipate teams of 3–4 members.

³ The number of members will be announced around week 5. We anticipate teams of 6–7 members.

⁴ For explanation on contribution rating, see https://chatw.ch/files/grading_teamwork_example.html.

⁵ The room may change. Please look out for the announcement in December.

⁶ https://uzhwwf.qualtrics.com/jfe/form/SV_b9Dzs7f5A4J2hTM

⁷ https://www.ifi.uzh.ch/dam/jcr:1b564225-e6bd-437c-9e20-a07bca1c4df2/Merkblatt-Plagiate_en.pdf

⁸ <https://oec.uzh.ch/en/studies/petitions/disability.html>

summarize why they decided to use the tool and include its output. No student may hand in an assignment as their own that is entirely generated by an AI tool.

- **Communication:** Please ask questions that do not contain sensitive information on the OLAT forum "Course Q&A". For questions that can be resolved quickly in a conversation, please visit the office hours (<https://chatw.ch/h>). If you need to email, use the OLAT "Email instructor" to ensure you provide complete information. We will prioritize answering questions on the forum; emails will be processed later.
- **Notification:** We expect you to receive notifications from the course OLAT's "Notifications" page. Please click the bell icon and choose "Subscribe". This action will send you emails of each notification. You can adjust email frequency by clicking on your profile icon at the top-right and choosing "System settings".
- **Grading scale interpretation:**
 - 6.00 Excellent
 - 5.75 – 5.50 Very good
 - 5.25 – 5.00 Good
 - 4.75 – 4.50 Satisfactory
 - 4.25 – 4.00 Sufficient
 - 3.75 – 3.50 Insufficient
 - 3.25 – 3.00 Poor
 - 2.75 – 2.00 Very poor
 - 1.00 Did not hand in80% of past students received a grade between 4.25 and 5.25

ACKNOWLEDGEMENT

The overall structure and content of this course were based on courses by [Daniel M. Russell](#) and [Peter Norvig](#). Many materials were drawn from [Iris Howley](#)'s and [Cori Faklaris](#)'s courses.
