

Introduction to Human-centered Design for AI, 5 credits

Introduktion till människocentrerad AI, 5 hp

Second cycle

Main field: Informatics, Second cycle, has only first-cycle course/s as entry requirements (AIN)

Syllabus is adopted by the Research and Education Board (2021-08-23) and is valid for students admitted for the spring semester 2022.

Placement in the Academic System

The course is given as a single subject course.

Prerequisites and Conditions of Admission

Degree of Bachelor or Degree of Bachelor of Science in Engineering or the equivalent of 180 Swedish credit points or 180 ECTS credits at an accredited university. Applicants must have written and verbal command of the English language equivalent to English course 6 in Swedish Upper-Secondary School.

Course Objectives

The aim for this fundamentals course is to introduce the diverse fields of human-centered design and artificial intelligence (AI) to a multidisciplinary target group. By exposing different perspectives of the intersection of human-centered design and AI, the student will get an overall understanding of the possibilities of using AI technologies for designing human-centered services and products.

Following successful completion of the course the student should be able to:

Knowledge and understanding

- describe the fields of human-centered design, artificial intelligence, and their overlap
- identify possibilities and limitations with AI as a design material for user experience design

Skills and ability

- demonstrate ability to identify practical design implications with AI-driven services and products
- apply human-centric guidelines for adaptive and (semi-)autonomous services and products

Judgement and approach

- critically analyze how a human-centered design process can be affected by AI technologies

Primary Contents

The course consists of three parts:

I. Human-centered design (2 credits)

In the first part we introduce the fundamentals of human-centered design and human-computer interaction, such as information architecture, interaction design, usability, user experience, and Design Thinking. It provides a brief historical context to explain previous shifts in the field, and why AI can be approached as a new design material.

II. AI as a design material (2 credits)

The second part provides the fundamentals of AI as it relates to human-centered design. It introduces how different types of AI technologies such as Machine Learning work, and how it can affect end-user experience.

III. Conclusion: opportunities for human-centered design and AI (1 credits)

The final part of the course covers the various challenges and opportunities of design for, and with, AI. This part also relates these challenges and opportunities to new fields of study, such as designing for human augmentation, robotics, ethics of AI, service design and innovation, evaluation, and specific fields of application and implementation.

Teaching Formats

This course is based on video lectures and other resources such as podcasts, articles, and books. Students and teachers will meet in online forums to discuss course content.

Examination

The overall grades of Fail or Pass will be awarded for the course.

The course is examined by individual written assignments.

Name of the test		Grading
Written Assignment I	2 credits	U/G
Written Assignment II	2 credits	U/G
Written Assignment III	1 credits	U/G

If a disabled student has been granted learning support through a decision by Halmstad University, the examiner may decide on an adapted or alternative form of assessment for this student.

Course Evaluation

Course evaluation is part of the course. This evaluation should offer guidance in the future development and planning of the course. Course evaluations should be documented and made available to the students.

Course Literature

Carroll, J.M. Human Computer Interaction - brief intro. <https://www.interaction-design.org/literature>

Grudin, J. (2009). AI and HCI: Two fields divided by a common focus. *AI Magazine*, 30(4), 48-48.

Hassenzahl, M. User Experience and Experience Design. <https://www.interaction-design.org/literature>.

Johnson, M., & Vera, A. (2019). No AI is an island: the case for teaming intelligence. *AI Magazine*, 40(1), 16-28.

Löwgren, J. Interaction Design - brief intro. <https://www.interaction-design.org/literature>.

Maeda, J. (2019) *How to Speak Machine - Computational Thinking for the Rest of Us*. Portfolio Penguin / Random House.

Xu, W. (2019). Toward human-centered AI: a perspective from human-computer interaction. *Interactions*, 26(4), 42-46.

Yang, Q., Steinfeld, A., Rosé, C., & Zimmerman, J. (2020, April). Re-examining whether, why, and how Human-AI interaction is uniquely difficult to design. In *Proceedings of the 2020 CHI conference on human factors in computing systems* (pp. 1-13).