DM2586 Generative AI for Media Technology and Interaction Design 7.5 credits

Generativ AI för medieteknik och interaktionsdesign

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

The official course syllabus is valid from the autumn semester 2023 in accordance with decision by Head of School : J-2023-1396.Date of decision: 2023-06-07

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

- Knowledge and skills in programming, 6 credits, equivalent to completed course DD100N/DD1310/DD1318.
- Knowledge in probability theory and statistics, 6 credits, equivalent to completed course SF1919.

- Knowledge in algebra and geometry, 7.5 credits, equivalent to completed course SF1624.
- Knowledge in machine learning or artificial intelligence, 6 credits, equivalent to completed course DM1590, DD1420/DD2421 or DD2380.
- The upper secondary course English B/6.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After passing the course, the student should be able to

- describe the fundamental theoretical and conceptual bases of generative AI
- describe how generative AI has been developed historically
- describe the application space for generative AI
- analyse and describe possibilities and limitations to create texts and other content with generative AI
- use generative AI to create content as texts, images, number, music and video
- use application programming interfaces for generative AI
- analyse the possibilities about how generative AI should be able to support creativity
- analyse ethical challenges and risks with generative AI as for instance ownership and independence related to digital content that partly or completely has been generated with AI
- analyse and discuss possibilities with generative AI in relation to sustainability
- assess and discuss questions around equal opportunities, diversity and equal conditions related to generative AI

in order to be able to use generative AI for media technology and human computer interaction from human, ethical and sustainable perspectives.

Course contents

- The bases of generative artificial intelligence, AI (historical, theoretical, conceptual and practical).
- Common applications of generative AI (including trends).
- Application programming interfaces for generative AI.
- Creativity and generative AI (views on creativity, art and artistic work and related applications of generative AI).
- Generative production in media, generative design and art.
- Education and generative AI (challenges, possibilities and risks).

- Ethical perspectives on use of generative AI (for example values, independence and ownership).
- Gender equality, diversity and equally conditions perspectives and problems for generative AI (for example gender partiality).
- The future for generative AI (the development we can expect).

Examination

- LIT1 - Literature assignment, 2.5 credits, grading scale: P, F
- PRO1 - Project work, 5.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.