DT2300 Sound in Interaction 7.5 credits

Ljud i interaktion

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

Establishment

The official course syllabus is valid from the autumn semester 2022 in accordance with Head of School decision: J-2021-1988.Decision date: 14/10/2021

Grading scale

A, B, C, D, E, FX, 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 DD1337/DD1310-DD1318/DD1321/DD1331/DD100N/ID1018.

Knowledge in human-computer interaction, 6 credits, equivalent to completed course DH1620/DH1622.

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:

- critically read a scientific paper on sound and interaction, and extract useful information from it

- identify and describe the major principles for sound in interaction, including communication of information through sound, sound feedback in interaction, and sonification of movements

- identify, describe and analyse properties of existing soundscapes and suggest changes for a better and sustainable sound environment

- identify, describe and analyse the control aspects of sound based interactive applications

- evaluate how sound based interactive applications function

- use free state-of-the-art software tools and sensors (based on Arduino, Raspberry Pi, or other platforms) for designing new sound-based interactive applications

- propose efficient designs for new applications using sound in interaction that are both inclusive and sustainable

- justify, document and present design, implementation and evaluation of a new application.

Course contents

- Basic principles of sound perception in interaction

- The relationship between sound and movement

- Sound as an information carrier

- The use of sound as feedback in control applications, including haptics

- Data representation with sound, including interactive sonification

- Use of sound in treatment applications, including applications for people with disabilities

- Sound and interaction in everyday life

- Sound models for interaction, including models for portable devices

Examination

- INL1 - Assignments, 1.5 credits, grading scale: A, B, C, D, E, FX, F

- PRO1 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F

- LAB1 - Laboratory Assignments, 3.0 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.