DT2470 Music Informatics 7.5 credits

Musikinformatik

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

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

Establishment

The official course syllabus is valid from the spring semester 2023 in accordance with the decision by the head of the school: J-2022-2098.Date of decision: 2022-09-25.

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

- Knowledge in probability theory and statistics, 6 higher education credits, equivalent to completed course SF1910-SF1925/SF1935.
- Knowledge and skills in programming, 6 credits, equivalent to completed course DD1310-DD1319/DD1321/DD1331/DD1337/DD100N/ID1018.

- Knowledge in algebra and geometry, 7.5 higher education credits, equivalent to completed course SF1624.

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 shall be able to

- account for how feature extraction works and explain why it is needed
- recommend methods for comparing and modelling of music data
- design, implement and evaluate own methods for modelling of music data

in order to

- be able to describe how information at different levels of abstraction can be extracted from music data (acoustic as well as symbolic) and be used in many applications (e.g., search, retrieval, synthesis)
- be able to design algorithms for handling and modelling of music data as well as evaluate their performance.

Course contents

Overview of music informatics, its history and applications as well as a review of basic principles, such as music representation, analog to digital conversion and Fourier transform.
Feature extraction that shows how music data can be described in different domains e.g. time, frequency and time-frequency.
How music content at different levels of abstraction can be expressed and compared with distinctive features.
Ways to model music data by means of statistical machine learning methods.
Evaluation of models of music data and their application in reality.

Examination

- LAB2 - Laboratory work, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project assignment, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- UPP2 - Written report, 1.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN2 - Exercises, 0.5 credits, grading scale: A, B, C, D, E, FX, 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.

Transitional regulations

The earlier examination LAB1 is replaced by LAB2, PRO1 is replaced by PRO2, and UPP1 is replaced by UPP2 with ÖVN2.

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.