DH-401

Digital musicology

Rohrmeier Martin Alois

Cursus	Sem.	Type
Digital Humanities	MA2, MA4	Obl.
Digital Humanities		Opt.

Language of teaching	English
Credits	5
Session	Summer
Semester	Spring
Exam	During the semester
Workload	150h
Weeks	14
Hours	**5 weekly**
Courses	3 weekly
Project	2 weekly
Number of positions	

Summary

This course will introduce students to the broad range of topics in digital musicology as well as essential theoretical approaches and methods. In the practical part, students will carry out a small course project on their own.

Content

Digital Musicology (DM) is a vibrant field which studies music, its properties and its development across genres, times, historical traditions and cultures. The digital humanities revolution and its data-driven methods have initiated a paradigmatic shift in musicology, making it possible to tap into musical corpora of unprecedented size and often reveal new kinds of evidence. Since music is a phenomenon of the human mind, the field uses methods that bridge music theory, psychology, data science and computational modeling. This class will offer an introduction into DM, its central questions and the state-of-the-art. It is structured around the core parameters of music and surveys some of the main ways of studying them formally and computationally.
The class will be complemented with musical and computational exercises. Students will carry out a small practical project in joint group work.

Course topics include:

- Core research questions in DM
- Musical corpora, representation, and transmission
- Psychoacoustic foundations
- Rhythm, meter, expressive timing, groove
- Tuning, scales and modes
- Models of tonal pitch, tonal space, models of tonality
- Melodic shape and structure
- Musical expectancy and predictive processing
- Combining notes and polyphony
- Chords and harmony
- Musical form and musical grammar
- Cultures, histories, geographies and networks
- Music aesthetics

Keywords

music, digital humanities, musicology, music theory, data science, music cognition

Learning Prerequisites

Required courses

Required course (obligatory):

- Foundations of algebra, statistics and data analysis
- Basic programming (e.g. Python, Julia)

Recommended courses

Recommended background:

- CS320 Computer Language Processing (BA5)

- CS251 Theory of Computation (BA4)

Important concepts to start the course

Prior knowledge of music theory (e.g. notation, scales, chords) is desirable and beneficial, but the class can be completed without it.
Students with little or no experience in score reading may consult introductory texts such as:

- Henry, E., Snodgrass, J., and Piagentini, S. (2019). *Fundamentals of music: Rudiments, musicianship, and composition*, 7th ed., Pearson.

- Taylor, E. R. (1999). *The AB guide to music theory*. 5 vols. Associated Board of the Royal Schools of Music.

Students with musical backgrounds will rather benefit from a harmony textbook, for example:

- Laitz, S.G. (2003). *The complete musician: an integrated approach to tonal harmony, analysis, and listening.* Oxford University Press.

- Gauldin, R. (1997). *Harmonic practice in tonal music.* Norton & Company.

For online introductions, see for instance:

- https://www.musictheory.net/lessons
- http://musictheory.pugetsound.edu/mt21c/MusicTheory.html

Learning Outcomes

By the end of the course, the student must be able to:

- Distinguish the core concepts used in digital music research
- Explore and orient him-/herself in the multidisciplinary field and identify important research questions and methods
- Analyze databases containing musical and contextual data (e.g. corpora of pieces or metadata)
- Develop hypotheses about music and musical structures
- Assess / Evaluate their hypotheses with computational models
- Interpret results of their models in the context of the field
- Defend their research in discussion with peers

Transversal skills

- Set objectives and design an action plan to reach those objectives.

- Use a work methodology appropriate to the task.
- Assess progress against the plan, and adapt the plan as appropriate.
- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Communicate effectively, being understood, including across different languages and cultures.
- Take feedback (critique) and respond in an appropriate manner.
- Make an oral presentation.
- Write a scientific or technical report.

Teaching methods

The course teaching consists of weekly lectures that will cover core topics, concepts and methods. In addition, it will include tutorials, research paper discussion and feedback on class projects.

Expected student activities

Students are expected to attend the class regularly and actively contribute to the project section. Students are also required to fulfill the reading assignments.

Assessment methods

1. Active participation in class.
2. Class project on the topics covered in class.

Supervision

Office hours	Yes
Assistants	Yes
Forum	Yes