

Sound Studies and Sonic Arts

Summer Semester 2022

Phase Focus

Module Practice

Course Title Introduction to Algorithms and Complex Systems in Max/MSP | Workshop

Course Times and Location 13 – 17 June 2022 | LIE314

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Course Description

This workshop will give you an overview of some of the basic ideas underlying complex systems science and common algorithmic approaches. From stochastic systems to chaos, we will go through the background concepts, vocabulary and realization in Max/MSP of different well-known techniques used for algorithmic and generative systems. Whether you're interested in using those as a basis for your installations and audio works, creating your own algorithms or later going deeper into studying specific one, the class is designed to provide an introduction to help you orientate yourself through core notions. There won't be any complex equations involved.

The aim of the workshop is for the students to either do a presentation around a related subject and method of artistic research at the end of the week, or subsequently create a fixed media sound work responding to the themes of the workshop, to be presented later on.

Requirements for attending

The class is limited to 12 students.

Bring your computers and headphones. You should have a basic knowledge in Max/MSP (or attended the Max/MSP introduction course during WS 2021-22) and have it installed on your computer. Beyond this, I expect you to be curious and engaged (commit to come on all the days).

Credit Points

Passing the first assignment is mandatory for submitting the second assignment.

2CP assignment (graded: Practice): Regular attendance and 20' presentation in class.

Consecutive assignment leading to 4CP for the course (graded: Practice): Regular attendance and fixed media audio sound work or installation documentation. Due: 1 Nov.

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Schedule

- 1 Randomness, Probabilities, Markov Chain. Examples of artist's approaches.
- 2 Chaos, Attractors, L-systems
- 3 Cellular automata
- 4 Genetic algorithms
- 5 Presentations day

Suggested Reading

Mitchell, Melanie. *Complexity: A Guided Tour*. Oxford [England] ; New York: Oxford University Press, 2009.

Nierhaus, Gerhard. *Algorithmic Composition: Paradigms of Automated Music Generation*. Wien; New York: Springer, 2009.

Miranda, Eduardo Reck. *Composing Music with Computers*. 1st ed. Music Technology Series. Oxford ; Boston: Focal Press, 2001.