

Sound Studies and Sonic Arts

Summer Semester 2021

Phase Focus

Module Practice

Course Title Turning Web Technologies into Artistic Tools | Seminar

Course Times and Location Tuesday | 10:00 a.m. – 14:00 p.m. | online

Instructor [Dr. Luc Döbereiner](#)

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Office Hours Upon request after class

Course Description

We are witnessing a time marked by dramatic transformations in the ways in which we engage with each other, ourselves, and the world. Networked computation, web technologies, data processing, and digital objects are ubiquitous and in a post-COVID world they have become even more all-pervasive and indispensable to most of our relations and activities. This seminar is intended to empower artists and musicians to turn these technologies from structures that shape our lives into artistic and musical tools and materials that we can actively engage with. This requires, first of all, to learn programming fundamentals using the world's most-used programming language *JavaScript* as well as the basics of how web technologies work and interface. We will discuss aesthetic questions concerning the digital object, computation, networks and generative processes while becoming familiar with technologies such as the Web Audio API, which allows musicians, composers and sound artists to use common web browsers to build complex patches, tools and instruments.

The course is aimed at students with or without prior programming experience. Dedicated individual work on exercises and assignments is essential.

Requirements for Attending

Maximum of 15 students.

Exam / Credit Points

2CP (not graded: Practice, Free Focus): Regular attendance and submitting all exercises and assignments. Passing the first assignment (handing in all exercises) is mandatory for submitting the second assignment.

Consecutive assignment leading to 4CP for the course (graded: Practice, grading: only the consecutive assignment is graded): Generative work (sound, image, and/or text) implemented in *JavaScript* and a three-page written documentation that includes title, comments on algorithms and concepts and a discussion of the aesthetic background and motivations of the piece. Due 1 November 2021.

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Schedule

- 20.4. Introduction: Computation, the Web, and Digital Art
- 27.4. JavaScript Fundamentals: Functions and Data Structures
- 11.5. The Digital Object and the Browser
- 18.5. Interfacing and Interacting
- 8.6. The Aesthetics of Networks, Protocols and APIs
- 22.6. Web Audio I – Signals and Sound Synthesis
- 29.6. Web Audio II – Generative Systems

Supporting Media

- Cox**, Geoff, Alex McLean, and Adrian Ward. "The Aesthetics of Generative Code." In *Proc. of Generative Art*, 2001.
- Fazi**, M. Beatrice, and Matthew Fuller. "Computational Aesthetics." In *A Companion to Digital Art*, by Christiane Paul, 281–96. Hoboken, New Jersey: John Wiley & Sons, Inc, 2016.
- Haverbeke**, Marijn. *Eloquent JavaScript: A Modern Introduction to Programming*. Third edition. San Francisco: No Starch Press, 2019. <https://eloquentjavascript.net>.
- Hui**, Yuk. *On the Existence of Digital Objects*. Electronic Mediations 48. Minneapolis: University of Minnesota Press, 2016.
- Larsen**, Lars Bang, ed. *Networks*. Documents of Contemporary Art. Cambridge, MA: The MIT Press, 2014.
- McCormack**, J., A. Eldridge, A. Dorin, and P. McIlwain. "Generative Algorithms for Making Music: Emergence, Evolution, and Ecosystems." In *The Oxford Handbook of Computer Music*, edited by R. T. Dean, 354–79. Oxford Handbooks. Oxford; New York: Oxford University Press, 2009. [LIB]
- MDN Web Docs**, <https://developer.mozilla.org/en-US/>

Repository

There will be an online repository containing readings, code examples and exercises.