

DES 520 Graduate Seminar

Intro Creative Coding Graduate Seminar + EVL

Creative Coding

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Creative Coding

Electronic Visualization Laboratory (EVL)
Engineering Research Facility (ERF)
842 W Taylor St

Synchronous

Website : www.evl.uic.edu/design/seminar/

Zoom
pass Design520!

Blackboard +

Creative Coding

4-5pm - Introduction – Course goals and objectives

5-6 – Class presentations

6-6.40pm – Discussion

Creative Coding

Course Website

<http://www.evl.uic.edu/design/seminar/>

Past Creative Coding websites:

https://www.evl.uic.edu/datsoupi/2019_400/

http://www.evl.uic.edu/datsoupi/2018_des400/

https://www.evl.uic.edu/datsoupi/491_350/

<https://creativecoding.soe.ucsc.edu/courses/cs491/>

Creative Coding

Class Structure

Wednesdays 4-6.40pm on Zoom

Mixed lecture and lab, with an in-class focus on introducing programming and software concepts:

- Theory and practice
- Informative and thorough, rather than comprehensive
- Programming tutorials, collaborative exercises; planning & developing projects

Creative Coding

Class Structure

- Graduate students in GD, ID
- Work on individual assignments and team projects
- Collaboration between GD+ID+CS+IDEAS

Creative Coding

Seminar Goals:

- To survey design topics in computer graphics, VR, visualization, new media design
- To become familiar with contemporary tools in VR and computational expression
- To work collaboratively to create conceptual creative coding projects at the intersections of design and technology

Creative Coding

Theory + practice

Project based / Exhibition organization

- projects will have a *research* (theoretical), *conceptual* and *technical* components
- projects should be novel and clearly illustrate a technical and/or conceptual contribution.
- each project needs to be documented with a website, video, and code

Creative Coding

Theory + practice

Publication/Conference submission

- write research papers to be submitted to a pee -reviewed conference
- review research papers from 2 classmates
- professional conference submission

Creative Coding

We are experiencing an outburst of the VR technologies across fields and industries. The increasing accessibility of headsets is attracting designers into VR to examine its potential beyond gaming.

However, despite this proliferation, there are conceptual, theoretical and practical challenges that require effective collaboration.

Seminar participants will share reflections of the impact of advanced technologies on contemporary design theory and discuss how contemporary technologies can inspire novel forms of design practice.

Creative Coding

With exponential growth in the application of Machine Learning (ML) and AI in all creative arts, the questions about authorship, ethics, autonomy, machine intelligence and aesthetics outline the evolution and future of creative AI.

What is the future of design in the context of rapid advancement of technology?

What happens when quantified technologies instead of being a choice for designer became a required tool?

Creative Coding

- a forum for exploring advanced topics in interactive media and virtual reality (VR) design.
- will investigate novel forms of design practice using advanced technologies
- Focusing on creative coding, Creative AI, data visualization, audio design, typography, VR/XR and seminal works, this seminar will take a deep dive into the techniques and challenges of the designs for virtual reality.
- will cover a breadth of topics not only limited to the “how-to” of VR, but also explore the history of the VR art and design, creative coding, real-time typography, ethics and visualization critique.

Creative Coding

Discussions topics

Creative AI

VR / XR

AR

ML/Deep learning

Cultural analytics

Responsive Media

Data Visualization

Virtual Exhibition Design...

Creative Coding

Tools

Maya Autodesk (3D)
Unity 3D (Educational free)
C#
Adobe CS
Audacity

Collaboration Tools

Google Drive
Blackboard
GitHub

Creative Coding

Evaluation

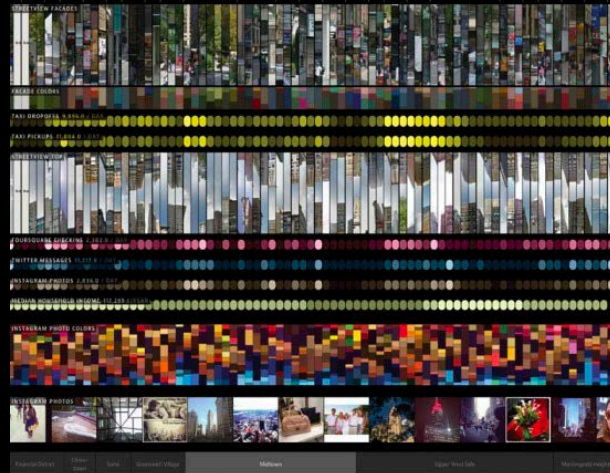
Group project
individual assignments
peer evaluation
attendance
participation
your willingness and ability to
accept peers & faculty feedback

14 classes
11 work sessions
Attendance is mandatory
>2 absences – final grade reduction
late submissions will be penalized
by 5% grade reduction for each overdue day
projects more than 5 days late are not accepted

Be prepared for a lot of hard work
Self – studies outside of the class
Research/design/code
Class time is limited-
In-depth course materials for review

LEV MANOVICH

CULTURAL ANALYTICS



Readings

[Understanding Virtual Reality: Interface, Application, and Design](#), 2nd Edition by William Sherman and Alan Craig

[Typographie](#) by Emil Ruder, Arthur Niggli/Teufen

[The Elements of Typographic Style by Robert Bringhurst](#), Hartley & Marks Publishers

[The VR Book - Human-Centered Design for Virtual Reality](#) by Jason Jerald (2015)
ACM Transactions on Graphics (Proceedings of SIGGRAPH), 2019 and earlier. (Available from ACM through UIC digital library)

Leonardo, 2020 and earlier (Available from MIT Press through UIC digital library)

Proceedings of the International Symposium on Electronic Art, 2019 and earlier (Available online)

Selected readings from The New Media Reader, edited by Noah Wardrip-Fruin and Nick Montfort, MIT Press 2003.

Peripheral Vision: Bell Labs, the S-C 4020, and the Origins of Computer Art, Zabet Patterson, MIT press, 2015.

[Unity Game Development Essentials Kindle Edition](#) by Will Goldstone.

[Unity 3D Game Development by Example Beginner's Guide](#) by Ryan Henson Creighton

EVL / Brief History

<https://www.youtube.com/watch?v=2aLOAjTISEs&t=6s>

Electronic Visualization Laboratory (EVL) – short history

- 1969 Dan Sandin is invited to UIC's Art Dept. to bring computers to the art curriculum
- 1973 Tom DeFanti comes to UIC with the GRASS system, EVL begins as a short order media house for education and research



Electronic Visualization Laboratory (EVL) – short history

40+ years of Art/Science collaboration at UIC

Joint program: CS and Art & Design departments

First program in the US offering MFA that is a formal collaboration of art and computer science 1973-2014

EVL – The Collaboration

- Artists organize projects, help visualize data, create media
- Artists are supported and get the toys to do their own work: often inspired by science
- Scientists get to communicate effectively
- EVL makes them look good
- EVL delivers visualization technology and techniques to science

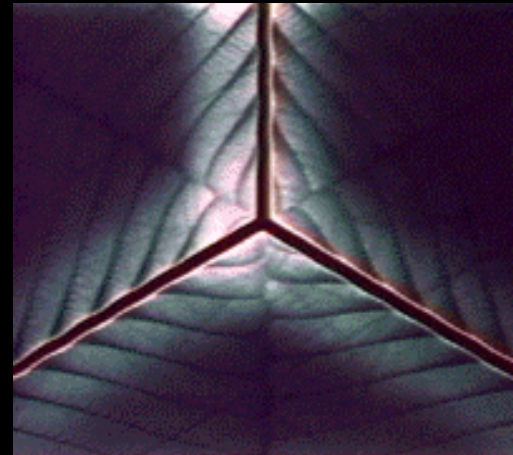
Electronic Visualization Laboratory (EVL)

- Advanced networking research
- Distributed computing/visualization
- Collaborative software
- Advancement of tools and techniques for collaborative work over high-speed, experimental networks
- Development of viable, scalable, deployable stereo displays
- Development of VR hardware, software, tools and techniques

Electronic Visualization Laboratory (EVL)

mid-70s - the Electronic Visualization Events
a series of live performances in which images were computer generated and color processed in real time with musical accompaniment

EVL helped to produce the CG special effects for the first Star Wars film



CAVE® 1992



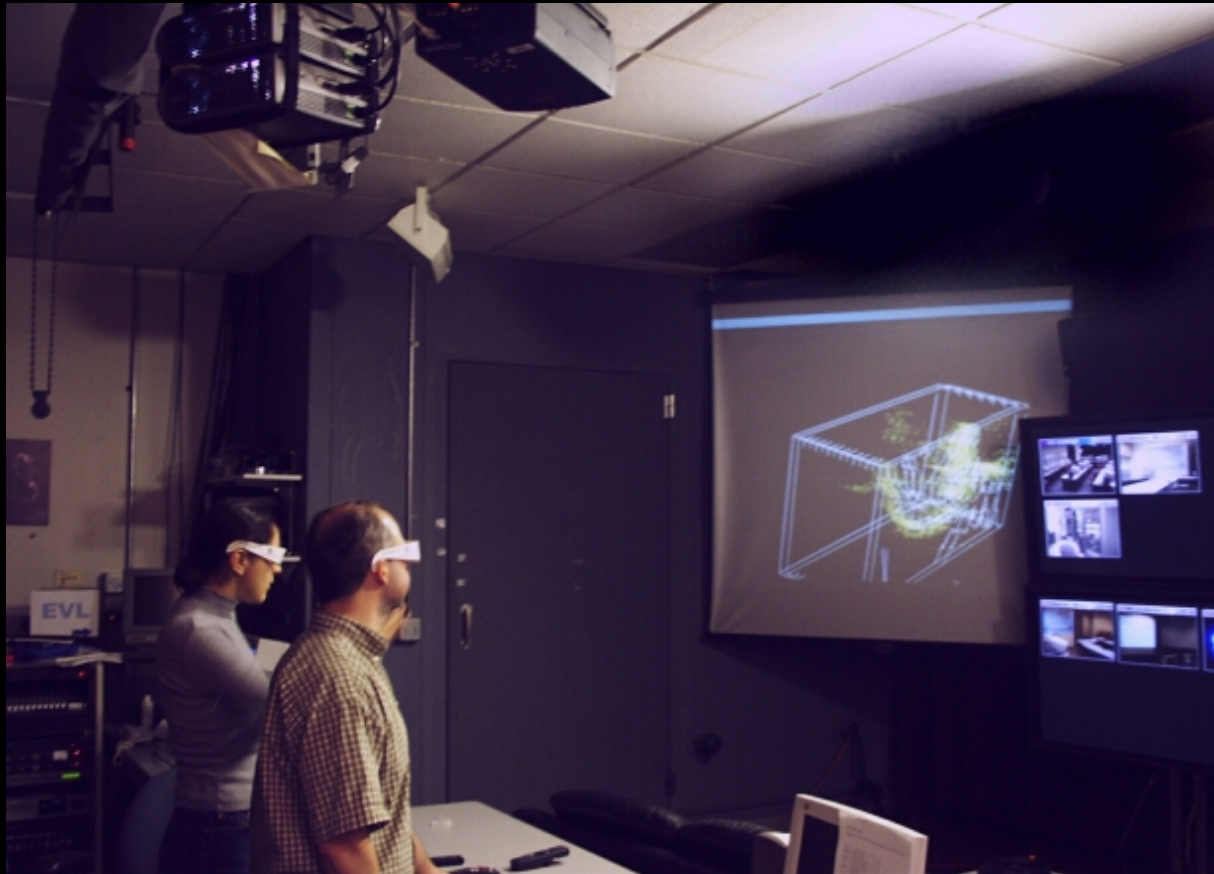
ImmersaDesk® 1995



Paris 1998



GeoWall -2000



Varrier



CAVE2 -2012



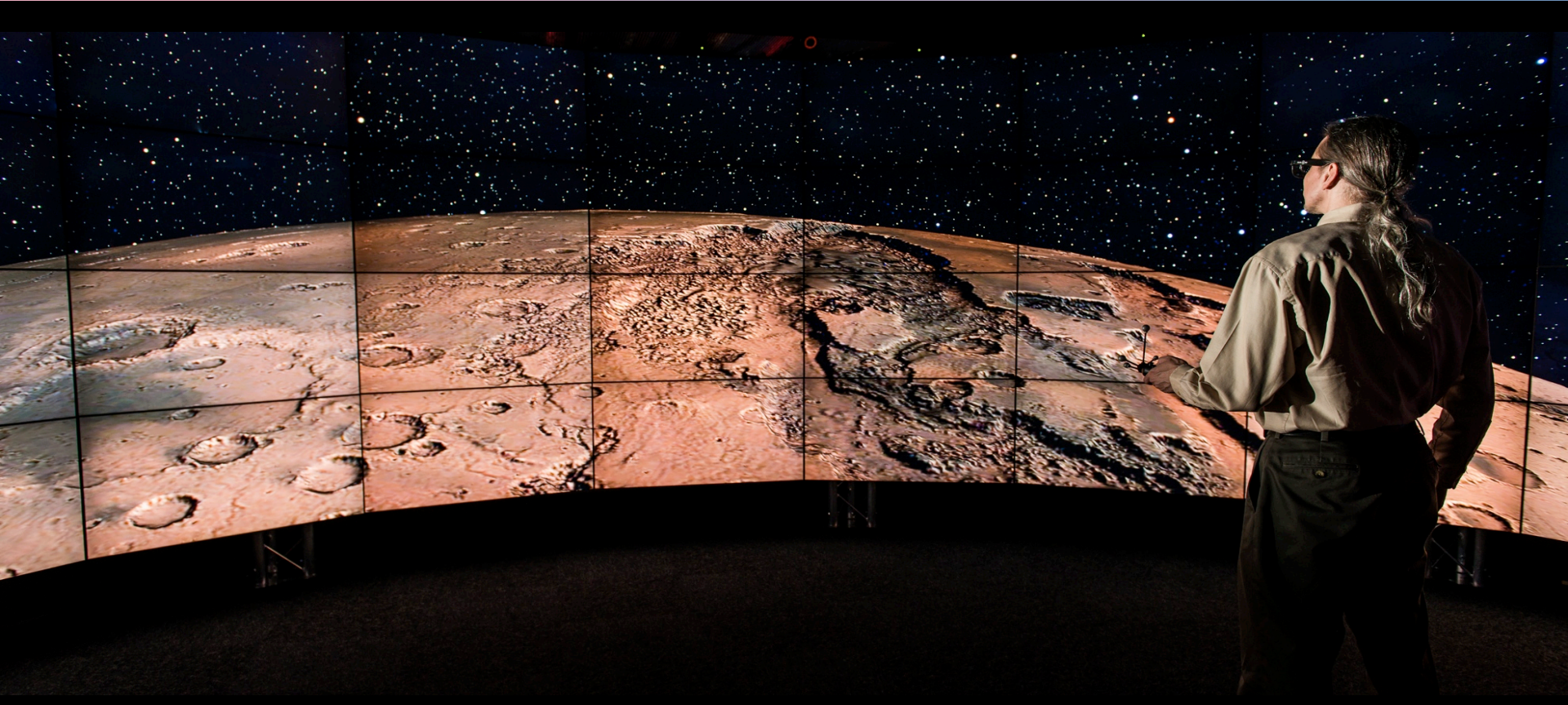
Particle Dreams in Spherical Harmonics



3D Brain MRI Data



Mars Surface

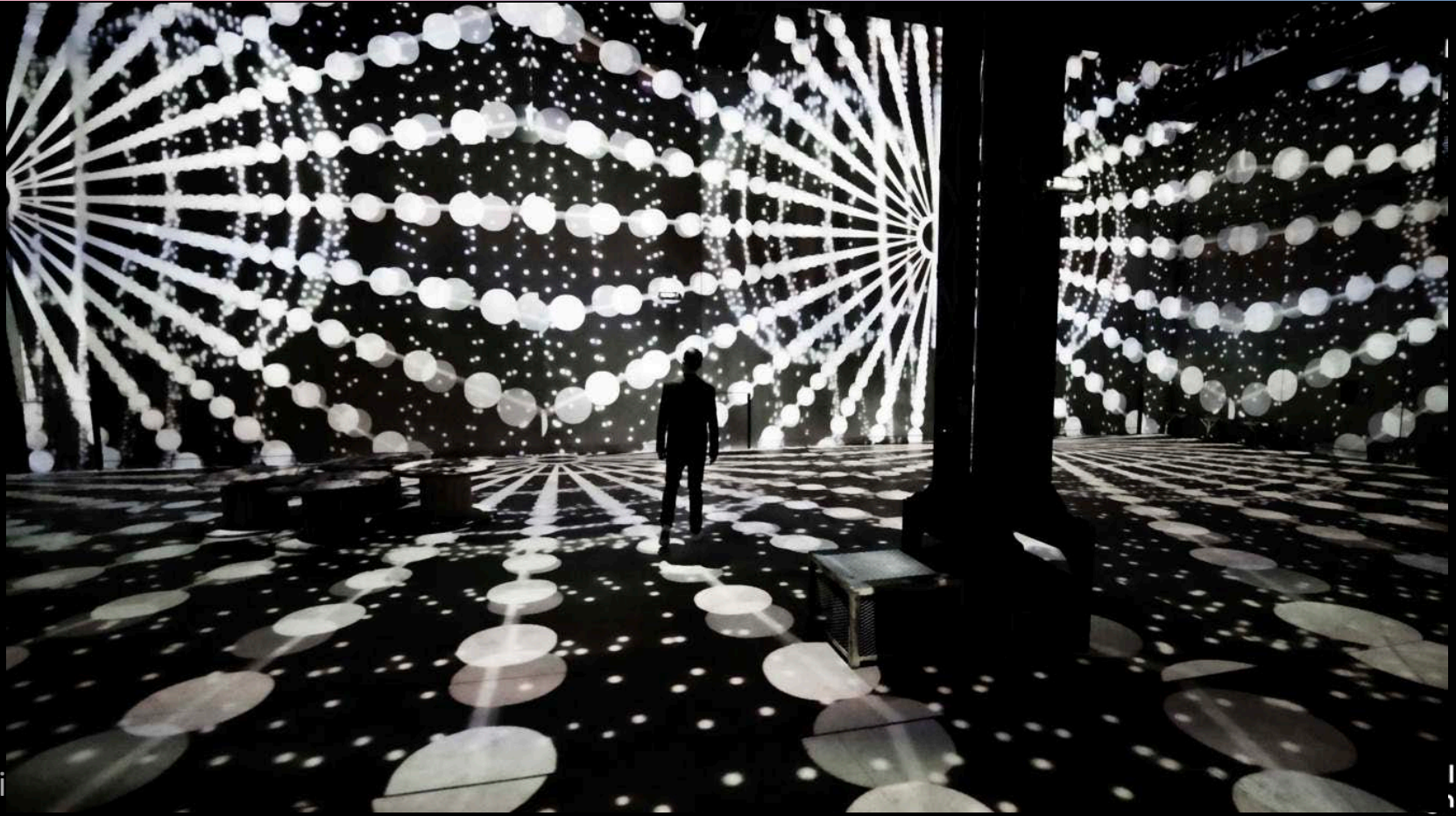


Presentations

Refic Anadol – WDCH Dreams



Ouchhh.tv studio Poetic AI Paris Installation 2019



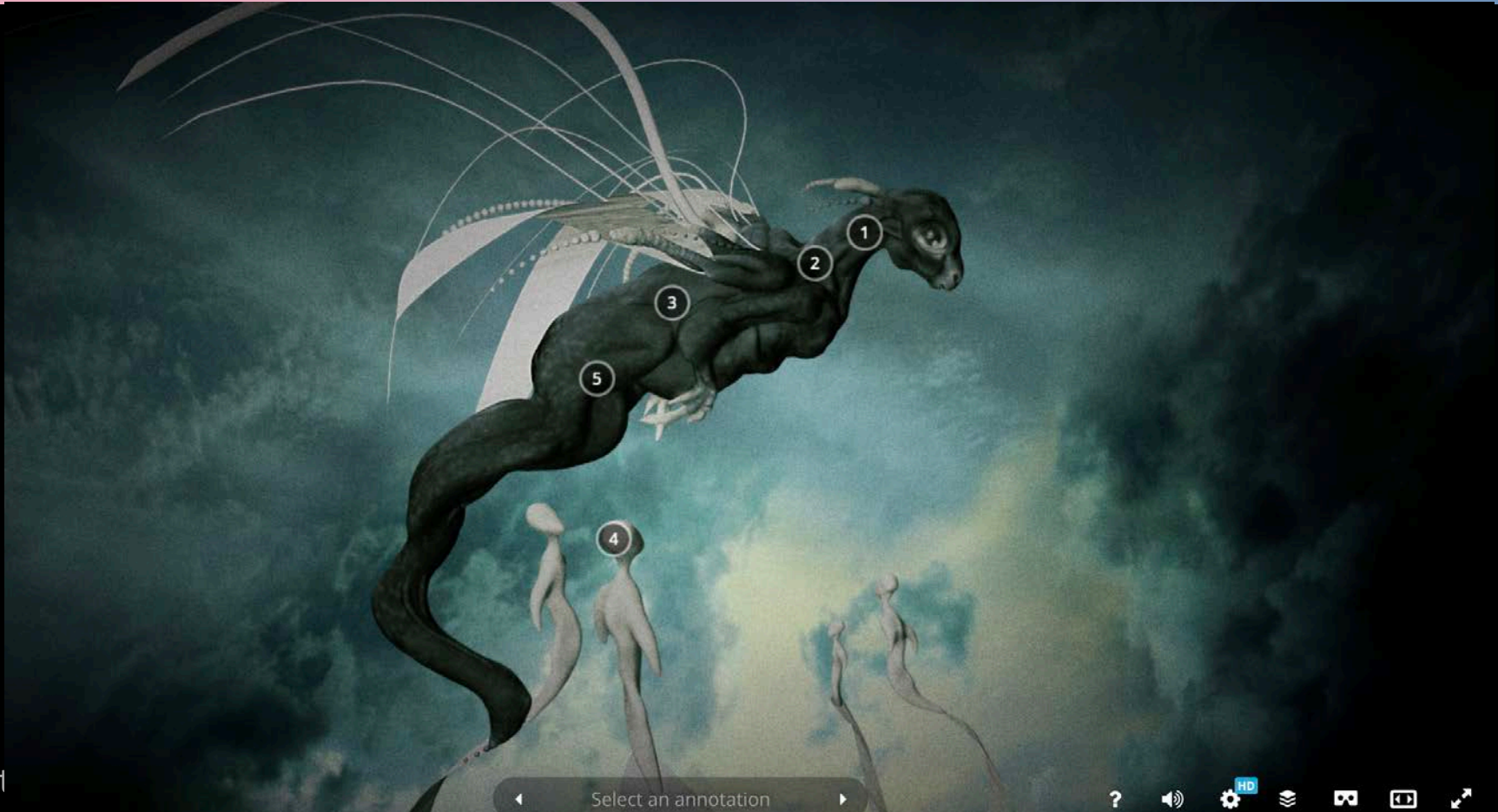
Robotype by Yuichiro Katsumoto



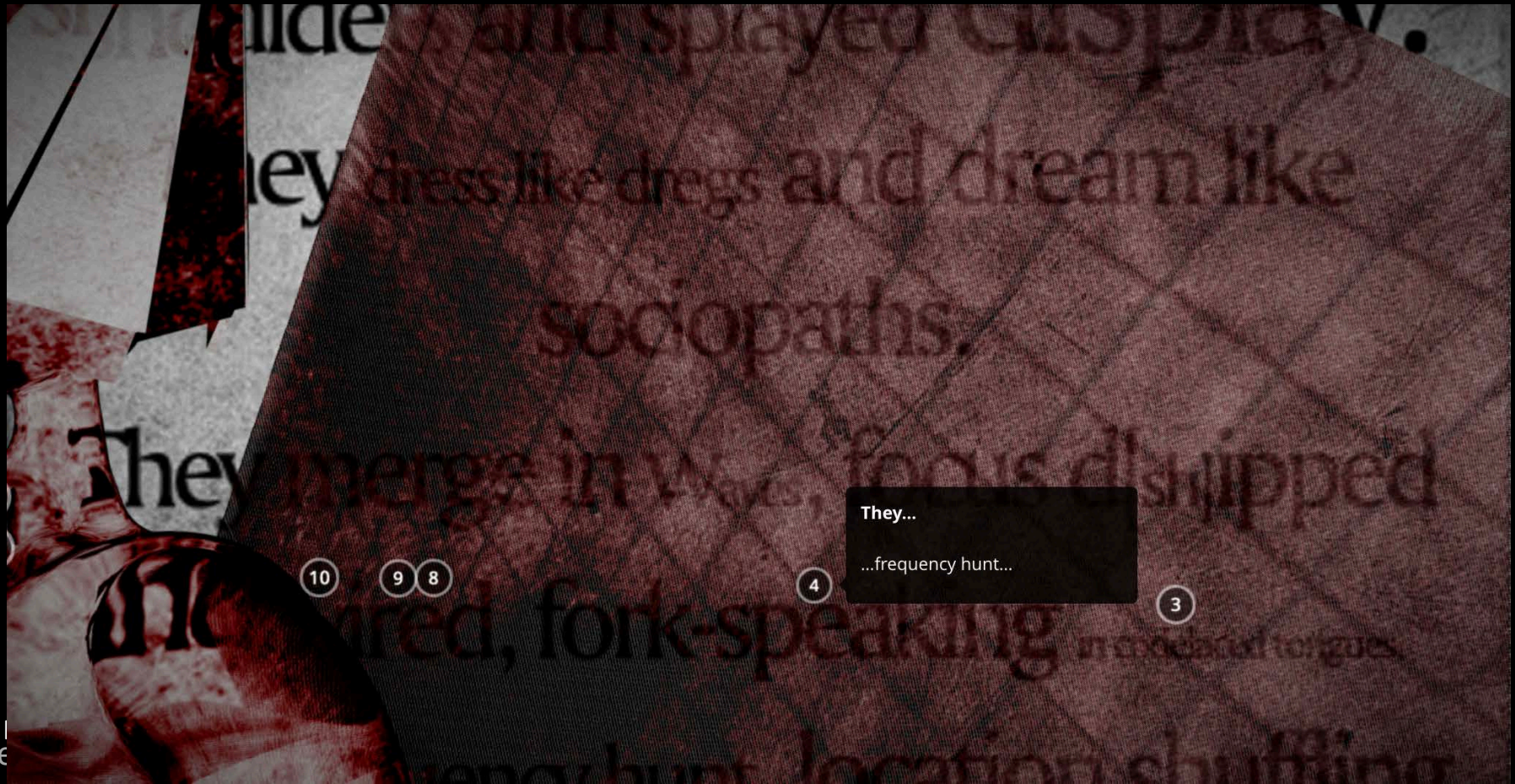
Quayola Strata



Mez Breeze. In the Skin of the Gloam



Wracking in the Upper Bubble



They...

...frequency hunt...

10

9

8

4

3

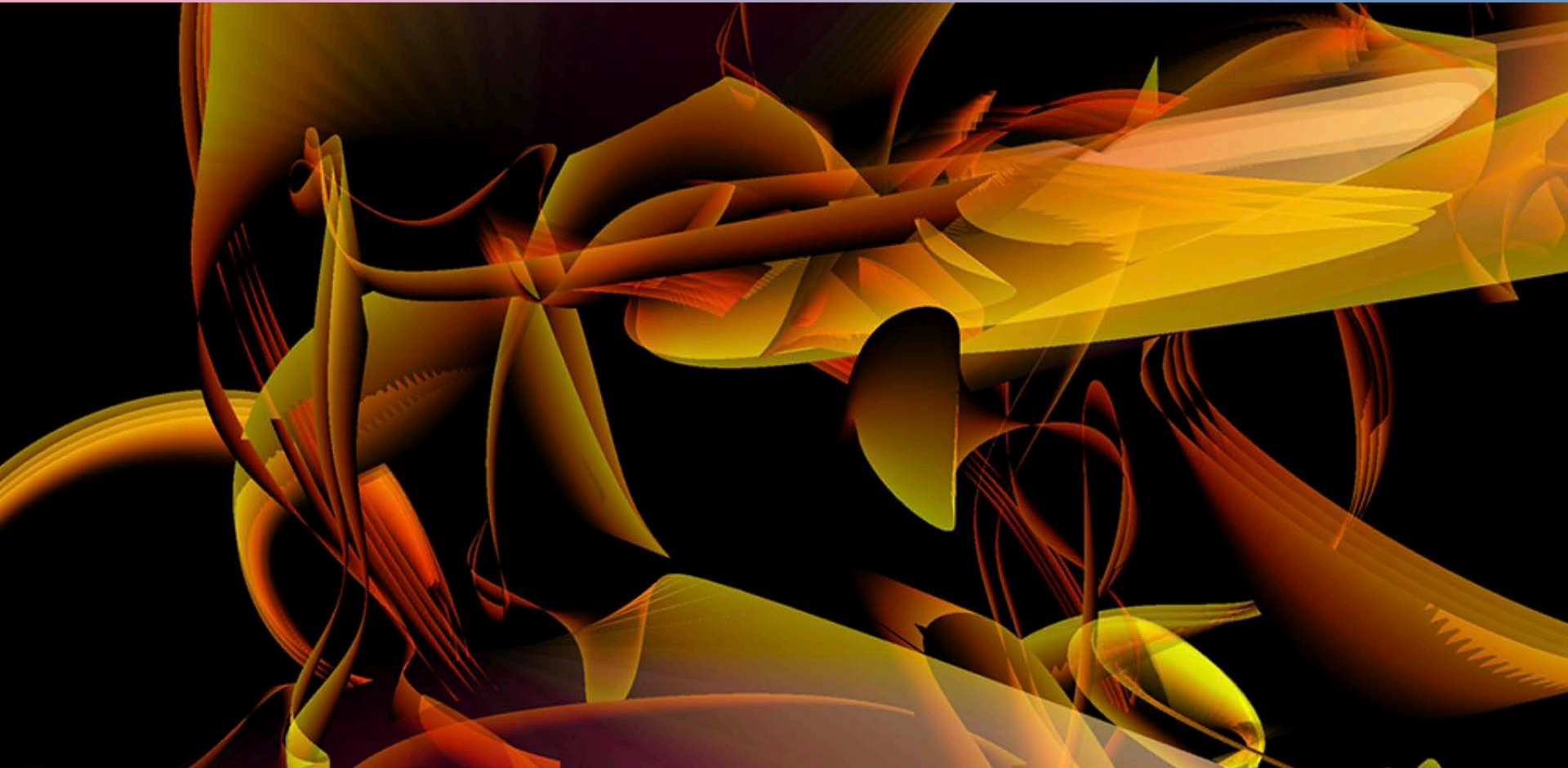
Diffusion Choir by Soso Limited



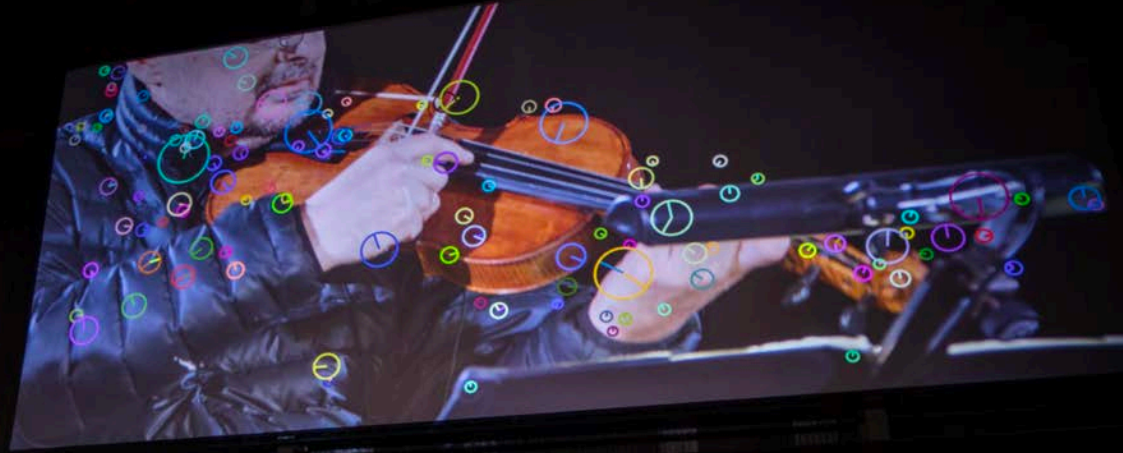
Cacophonous Choir by Hannah Wolfe, Sölen Kiratli, Alex Bundy



Myioi by JoAnn Kuchera-Morin, Andrès Cabrera, Kon Hyong Kim, Tim Wood



Sight Machine by Trevor Paglen



We Are All Made of Light by Maja Petric



Relational Aesthetics by Nicolaus Bourriaud

“

The role of artworks is no longer to form imaginary and utopian realities, but **to actually be ways of living** ...

Nicolas Bourriaud *Relational Aesthetics* 2002