

Volumetric Video

An **emerging format** of video featuring moving images captured in **three-dimensional space** to feature images that exist truly in 3D. Like a hologram — allowing them to be viewed from any angle at any moment in time.

When a **virtual reality film** is made with Volumetric Video, it's like a movie colliding with a video game.



Image from *Clouds (2014)*, interactive documentary created using RGBD Toolkit (DepthKit)

Case Study: The evolution of the RGBD Toolkit to DEPTHKIT

an open source software application for volumetric filmmaking

- **Breakthrough:**
 - Combines SLR Digital Camera with depth-sensor from the Kinect
 - Created a new medium for **Immersive Storytelling**
 - Makes **Volumetric Filmmaking** affordable and accessible
- Artists: James George, Alexander Porter, Jonathan Minard
- Originally developed during EYEBEAM artist residency



Image from *Clouds (2014)*, interactive documentary created using RGBD Toolkit (DepthKit)

Video Removed

Follow this link: <https://vimeo.com/42852185>

Description: CLOUDS

Excerpt from *Clouds* (2014), which was made using RGBDKit, prior to development of DepthKit & Depthkit VR

Clouds is a computational documentary featuring hackers and media artists in dialogue about code, culture and the future of visualization.

By Jonathan Minard (deepspeedmedia.com/) and James George (jamesgeorge.org/)

Film Supported by: The STUDIO for Creative Inquiry, Art && Code festival 2011, RESONATE festival 2012, Eyebeam Art+Technology Center



Excerpt from *Clouds* (2014), which was made using RGBDKit, prior to development of DepthKit & Depthkit VR

Video Removed

Follow this link: <https://vimeo.com/147892570>

Video with Juan Salvo, from the creative team of *GIANT* (2016), made using Depthkit VR and premiered at Sundance Film Festival

Video Removed

Follow this link: <https://vimeo.com/271472695>

Description:

Royal Swedish Opera, 2018-19 Season Programme in augmented reality (Promotional Video) – Towards the end, you'll see that aspects of the AR program were created using **DepthKit**.

ART & TECHNOLOGY in four “bins”:

- **Creative Technologists/Artists** developing digital tools for artists and individuals to create, access, share work
- **Artists** using digital tools for the creation and distribution of art work
- **Arts Programming** that supports research, creation, education, exhibition highlighting the intersection of art and digital technology, across all disciplines
- **Organizations** using digital tools for audience engagement, marketing, and interpretive programs

WIRED FRAMES: 2012 Exhibition by Eyebeam Artist-in-Residence [James George](#)



Our environment is full of machines interpreting our every gesture. We have video games programmed to judge our dance moves, electronic storefront advertisements that infer our gender, and security cameras that algorithmically deduce our intentions. These automated eyes peer through lenses of code continually attempting to make sense of our world.

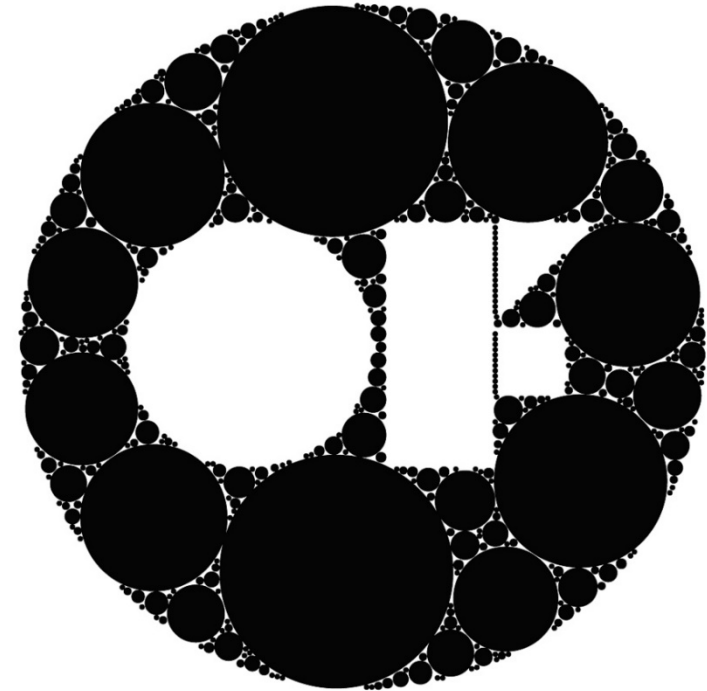
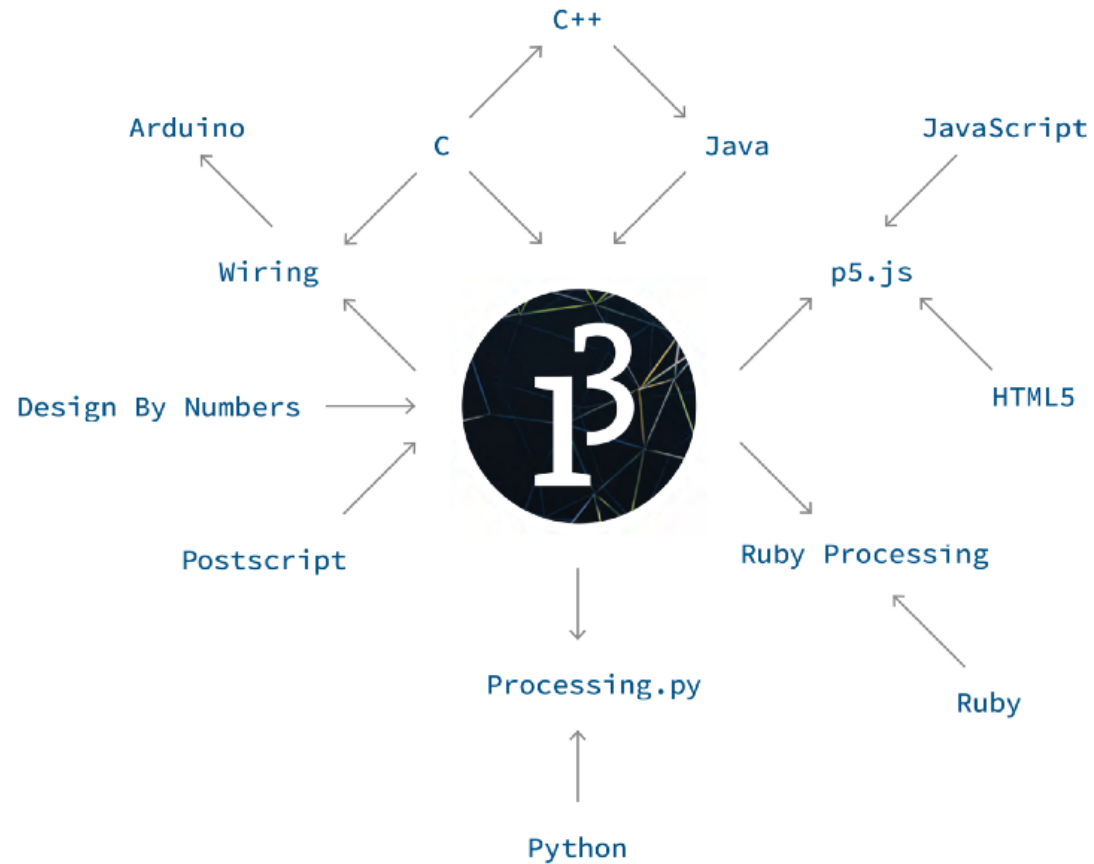
What would happen if we cracked open these vision machines to reveal the images flowing through?

How does their way of seeing influence our own self-perception?

- James George (2012)

Open Source Software Toolkits for the Arts (#OSSTA)

Popular Examples: Processing, p5.js, OpenFrameworks (C++)



Video Removed

Follow this link: <https://vimeo.com/74124094>

Description:

A short video reel showing recent interactive and audio-visual work done by the openFrameworks community. Additionally, the clips were pulled algorithmically from Vimeo videos tagged 'openFrameworks'

Video Removed

Follow this link:

<https://www.kadenze.com/courses/introduction-to-programming-for-the-visual-arts-with-p5-js/info>

Video Description:

Introduction to Programming for the Visual Arts with p5.js

Course Overview w/ Casey Reas, Lauren McCarthy, and Chandler Williams

Video Removed

Follow this link: <https://www.pbs.org/video/-book-art-creative-coding>

Title: The Art of Creative Coding, PBS Digital Studios (2013)

Description:

Programming plays a huge role in the world that surrounds us, and though its uses are often purely functional, there is a growing community of artists who use the language of code as their medium. Their work includes everything from computer generated art to elaborate interactive installations, all with the goal of expanding our sense of what is possible with digital tools.

Overview of NEA Media Arts Funding:

- **Production and exhibition (festivals, curated events) of all genres and forms of art** that use electronic media, film and technology (old/new) as an artistic medium or a medium to broaden arts appreciation
- Projects that enable the **production of analog and digital tools**, hardware and/or software that engage the process of hacking, circuit bending, creative coding, development of open source code, robotics, and audio or visual instrument building
- Projects providing **professional resources** to artists and organizations, workspace and facilities access to equipment, artist residencies, mentorships, and workshops
- National or regional **field-building activities** (conferences and field convening)



Carnegie Mellon University
PROJECT: Artist Residencies for Open-Source Software Development
FY2018

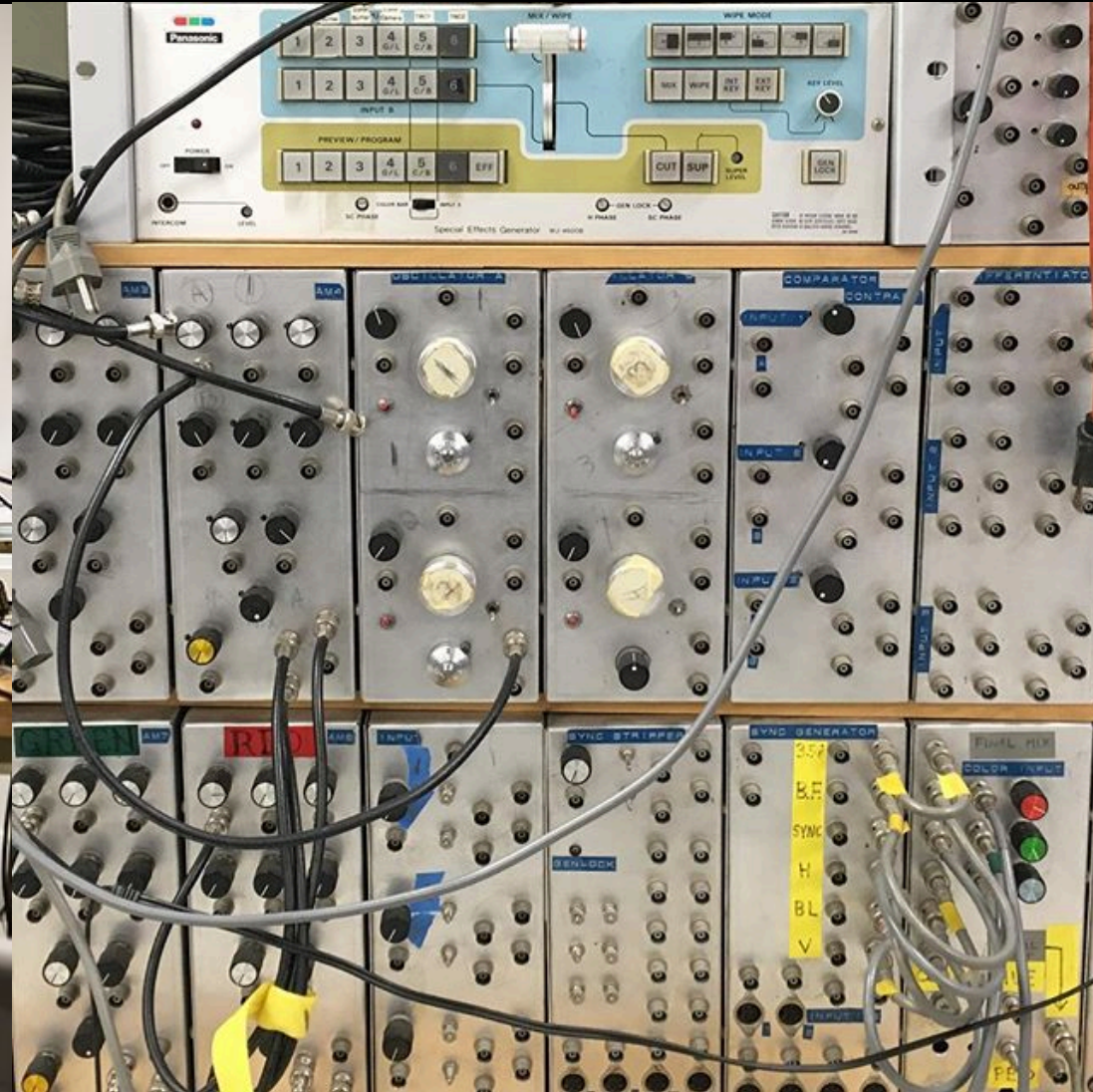
Photo: Carnegie Mellon University

Project Example #1

Carnegie Mellon University's Frank-Ratchye STUDIO for Creative Inquiry

Artist Residencies for Open-Source Software Development

- To support a series of developer “sprints” hosted at CMU’s Frank-Ratchye STUDIO for Creative Inquiry
- Up to 40 artists and technologists will have the time and space to further develop open-source toolkits
- Artists receive technical support, mentorship, housing, travel assistance, and a stipend, and will participate in public programs such as lectures, community workshops, and online presentations
- Partnerships include Processing Foundation, the OpenFrameworks Community, and the School for Poetic Computation



Alfred University's Institute for Electronic Arts (IEA)
PROJECT: Artist Residency Program
NEA Grantee FY2018

Project Example #2

Alfred University's Institute for Electronic Arts (IEA)

Artist Residency Program

- Multi-week residency to support projects in interactive media, large-scale installations, multi-channel displays, sonic arts, and experimental video
- Artists receive facilities access, technical support, and stipends towards accommodations and materials
- Full time technician supports artists and continues to serve as a resource after completion of the residency
- Artists engage in public programming, including lectures, exhibitions, and performances



Processing Foundation
PROJECT: Processing Foundation Fellowship Program
NEA Grantee FY2018

Project Example #3

Processing Foundation

Artist Fellowship Program

- Six-month program fostering new initiatives by artists and coders in the development and application of open-source software
- All work freely available for use and modification by the general public
- Fellows receive mentorship, access to equipment, stipends, and exhibition opportunities
- Fellows present work through performances, panel discussions, exhibitions, and community workshops
- Partnerships include the Code Liberation Foundation, the School for Poetic Computation, University of California Department of Design, and New York University's Interactive Telecommunications Program

Independent Exercise – use provided worksheet!

- What entities, institutions, or programs exist in your area that cultivate this type of experimentation? *Examples: specify art organizations, universities, makerspaces, museums*
- How do you see the role of a State Art Agency as part of an ecosystem that supports art and technology, for both organizations and institutions?

Group Exercise - Share your thoughts!

- What entities, institutions, or programs exist in your area that cultivate space for this type of experimentation? *Examples: art organizations, universities, maker spaces, museums*
- How do you see the role of a State Art Agency as part of an ecosystem that supports art and technology, for both organizations and artists?
- In what ways can the activity happening at the intersection of Arts & Technology align with priorities of other public initiatives happening at local, state, regional, national levels?

Questions?

Send us an email if you'd like to talk more!

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