

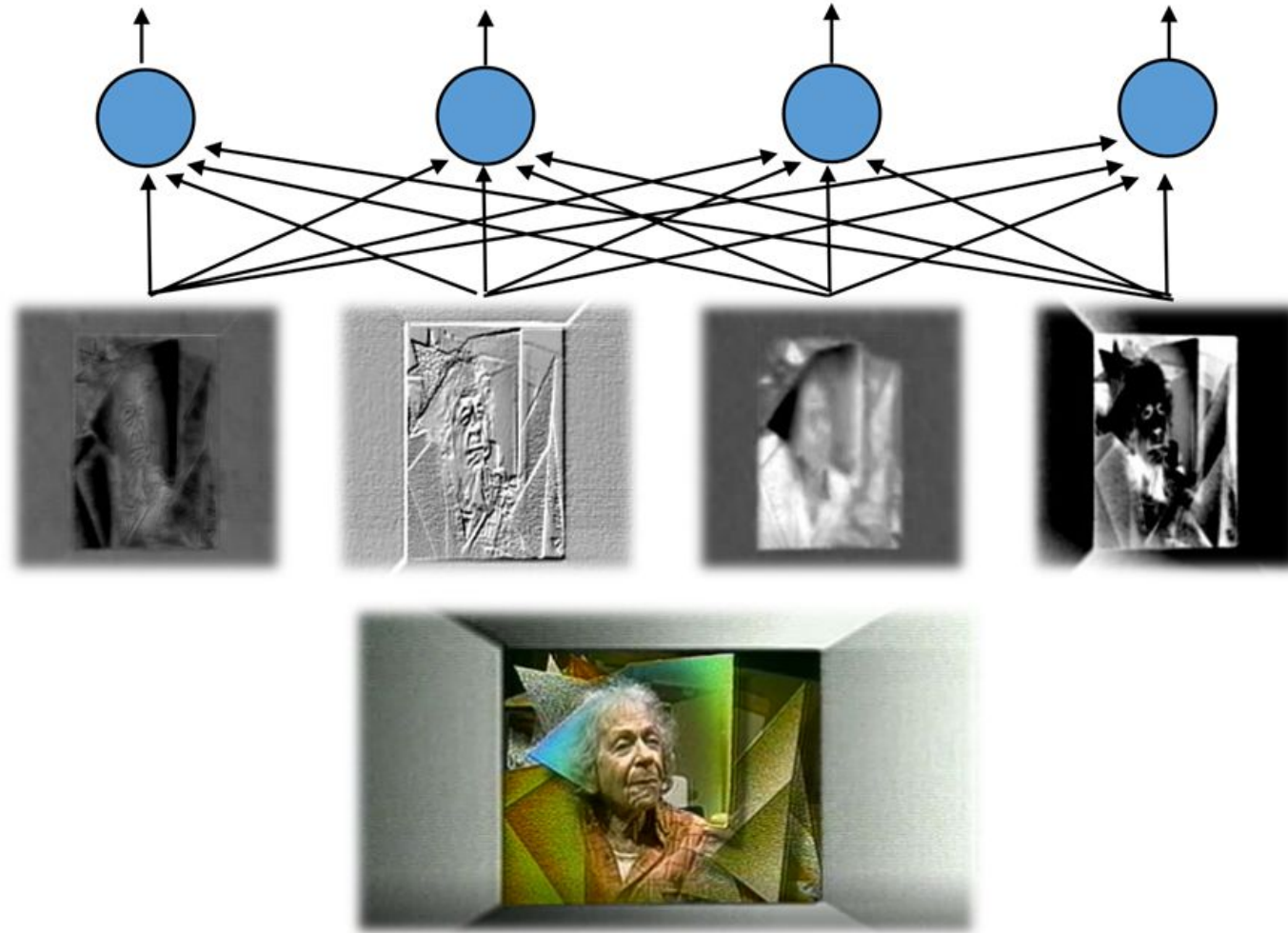
M U N I
A R T S

An abstract digital artwork featuring a central, somewhat face-like structure with a large, open mouth. The image is composed of various colors including green, blue, purple, and yellow, with a dark background. The overall effect is a complex, multi-layered visual that suggests a digital or artificial nature.

**What can we learn about
video art from artificial
intelligence?**

The case of VasulkaLiveArchive.net

The Vasulka Live Archive



Background of the project

- **Digitization of art collections** (Google Arts & Culture 2011) (Europeana 2009).
- An acute need to ensure the **preservation of electronic and digital art** as an important part of the cultural heritage of information societies (Media Art Needs Global Networked Organisation & Support. 2011).
- Most of the research projects applying AI on digitalized art collections have focused on static images and objects (digital reproductions of paintings, drawings, sculptures), and on older historical periods of art history (Renaissance, Baroque, Impressionism). (Spratt 2017) (Elgammal and Mazzone and Lui and Elhoseiny 2018) (Pilka 2023)
- **The uniqueness of the Vasulka Live Archive project lies in application of AI-tools on the 20 and 21st century art, and the audio-visual artistic videos particularly.**

1 Framing: Digital Humanities

- **Digital Humanities**: humanities with an IT twist.
- *“animation of the archive”* (Burdick and Drucker et al. 2012, 62)
- **Design thinking**: the central method of digital humanities.

*“... **Digital Humanities** both shapes and interprets [technological imaginary] ..., its engagement with **design as a method of thinking-through-practice** is indisputable. Digital Humanities is a production-based endeavor in which theoretical issues get tested in the design of implementations, and implementations are loci of theoretical reflection and elaboration.”*

(Burdick and Drucker et al. 2012, 13)

2 Pillars of the project

- (a) The digital archive of the Vasulkas' videos
- (b) Artificial Intelligence
- (c) The video art aesthetics

2a The Vasulkas' video art archive

- In the Vasulkas' work, there can be found **documentary films** depicting the decadent New York scene of the 1970s (*Participation* 1969-1977, the Vasulkas), **structural experiments with electronic signal** (the series *Studies*, 1970–1971, the Vasulkas), **confrontations of film language using video technology** and tools for manipulating electronic images (*Art of Memory*, 1987; *The Commission*, 1983, both Woody Vasulka), **immersive environments** (*Lava and Moss*, 2000, Steina Vasulka), and complex **interactive installations** (*The Brotherhood*, 1998, the Vasulkas).
- The diversity of the Vasulkas' work makes it good **representative of video art in general**. It is a prerequisite for using their archive for training AI to be able to search for pre-defined theoretical and aesthetic attributes of video art too.
- **Dataset:** The unstructured digital archive of Steina and Woody Vasulka, which included **536 GB** of materials of various types (videos, photos, text documents). Out of the total **1800 audiovisual works** in the archive, 880 video files were successfully converted to mp4. The resulting group of converted videos created a data **corpus of 137 GB, containing 1252 items** (watch-time: six days, 20 hours and 27:30 minutes).
- **List of the Vasulkas' videos:** We found a total of **105 (out of 108) works** by the Vasulkas, which are represented in the dataset available on the web (VasulkaLiveArchive.net) by **124 items** in the form of art videos, video documentation of art installations or documentary videos reporting on these works.

2b AI as an analytical tool

	Pattern recognition	Pattern generation
	(Analysis and description)	(Production and prediction)
Objects	<u>Studying objects</u>	Generating objects
Subjects	Studying subjects	Generating subjects

Four different applications of machine learning and AI in aesthetics. The table is taken from the book (Manovich and Arielli 2021–2024, 12).

*Inspiration:

Computer assisted structuralism

"For some types of literature — especially for verse — we can already define the code with sufficient precision so that, for example, it is possible to artificially generate a literary text according to the rules defined in this way." (Levý and Pala 1968, 74)

Nooscope – AI as a means of knowledge extractivism

"[AI as] an instrument of knowledge magnification that helps to perceive features, patterns, and correlations through vast spaces of data beyond human reach." (Pasquinelli and Joler 2020)

AI and distant reading

"Distant reading: where distance, ..., is a condition of knowledge: it allows you to focus on units that are much smaller or much larger than the text: devices, themes, tropes or genres and systems." (Moretti 2000)

2c Aesthetics of video art

– Video art by definition

Video art is a term for artistic video footage created with analogue and digital technology, documentary films working with an anti-television aesthetic, reminiscences of avant-garde experimental film, structural experiments on the level of interaction with electronic signals, or immersive video environments and interactive installations.

– Videology

Five attributes of video art by **Peter Weibel: Synthetics, Transformation, Self-reference, Instant time, and Box.** (Weibel 1974)

– The Aesthetics of Narcissism

*“The medium of video art is the psychological condition of the self split and doubled by **the mirror-reflection of synchronous feedback** (...).”* (Krauss 1976, 55)

3 From theory to UX design

– Metadata

- ✓ Video identifiers;
- ✓ **Visual and audio leitmotifs**

Thematic cluster	Visual objects	Acoustic objects
Human	Body, Face, Hand, Steina, Woody	Speech, Singing
Interior/Exterior	Interior, Landscape	x
Natural elements	Air, Earth, Fire, Water	Air (Noise), Fire (Noise), Water (Noise)
Special Effects / Electronic signal manipulation	Rutt/Etra processor, Keying, Machine vision (fisheye effect), Effect	Noise
Machine and tool	Car, TV, Violin	Electronic music, Acoustic music, Playing the violin, Car (noise)
Symbol	Numbers, Letters, Lines	x

3 From theory to UX design

– From Intelligent software to Intelligent tool

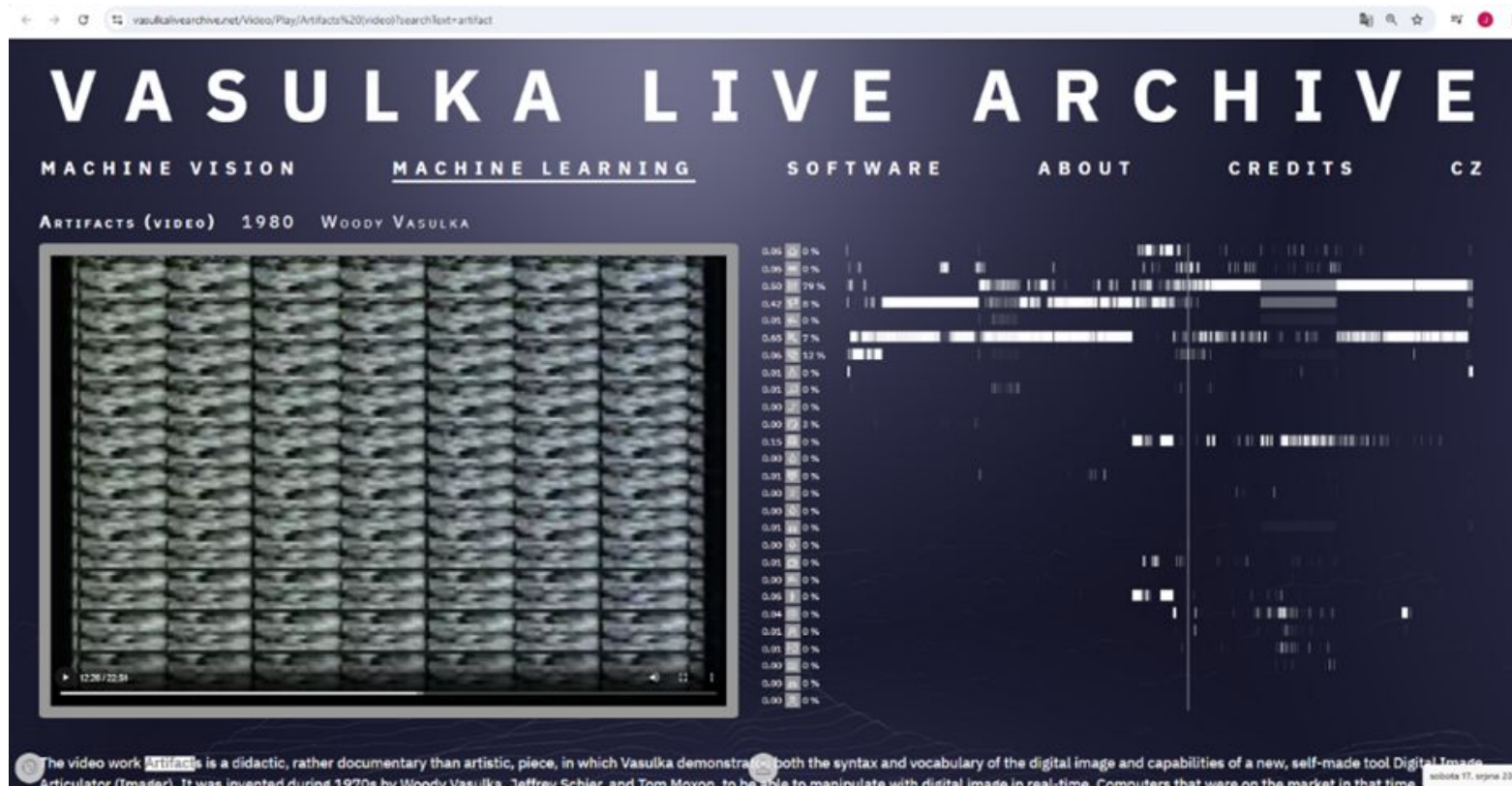


Level 1 (Machine Learning)

The screenshot shows icons representing visual and acoustic leitmotifs by which videos can be searched individually and in groups on VasulkaLiveArchive.net. (VasulkaLiveArchive.net 2022)

3 From theory to UX design

– From Intelligent software to Intelligent tool



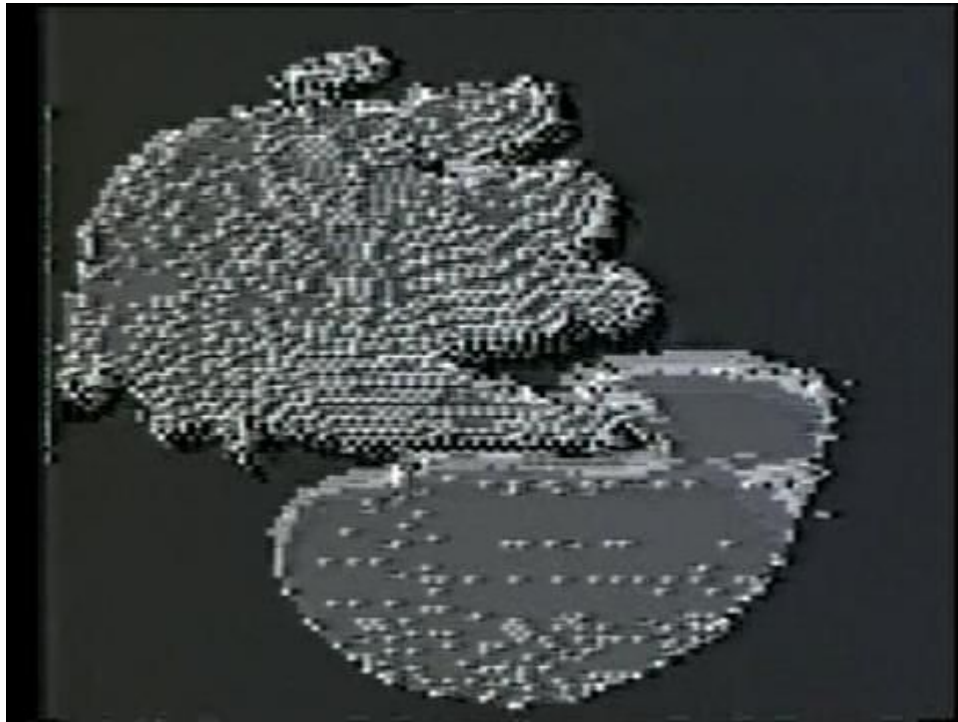
Level 2 (Machine Learning)

The screenshot shows the design of an interface that **integrates both a video player and a timeline that tracks what motifs the intelligent software sees in the video and with what probability.** (VasulkaLiveArchive.net 2022)

4 What can we learn from AI about video art?

– Videology revisited

- Peter Weibel: 5 attributes of video art: **Synthetics, Transformation, Self-reference**, Instant time, and Box.



Woody Vasulka, *Artifacts*, 1980.

„Exploring the computer image in shades of grey pixels frame by frame and in real time. A visualization of the concept of «sharing the creative process with the machine». **The image itself reveals the process of its construction.** By freezing the image of a vibrating circle or a moving hand, the viewer becomes aware of the process that only the moving image represents a form whereas the frozen image is unformed digital matter. **Sound is Electronically generated**, the image by using the Digital Image Articulator by Jeffrey Schier and Woody Vasulka.“

[ZKM Videosammlung](#)

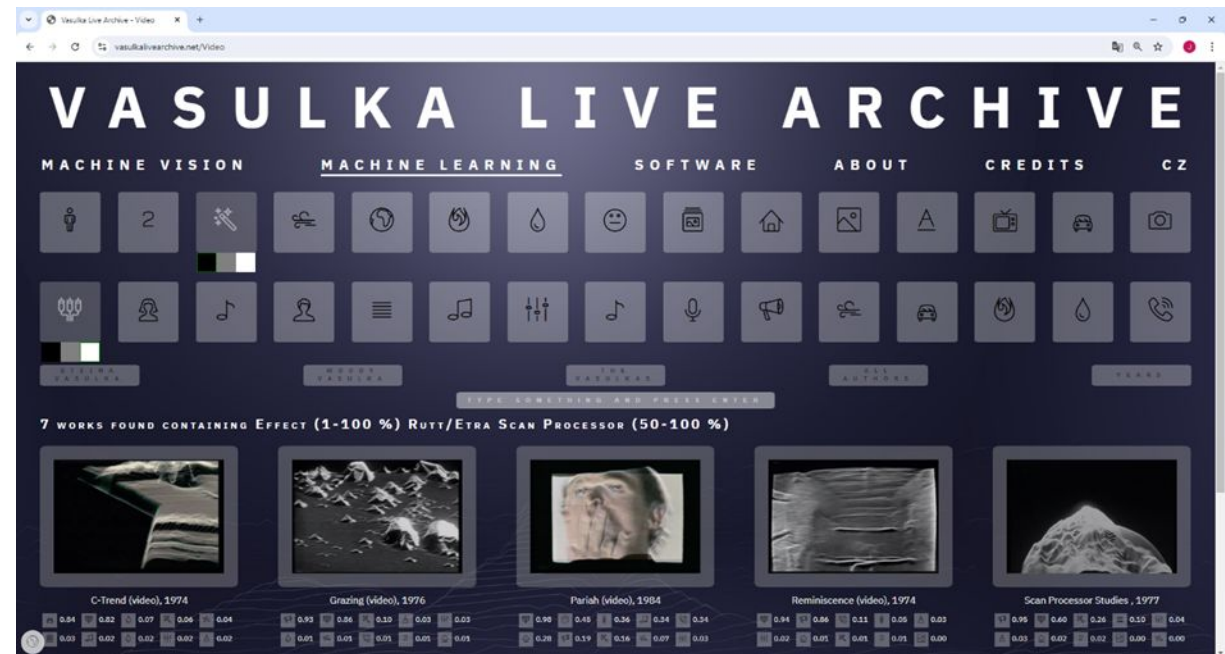
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Visual signs			
	1–100 %	25–100 %	50–100 %
Effect	108	40	22
Effect + Rutt/Etra	34	9	7

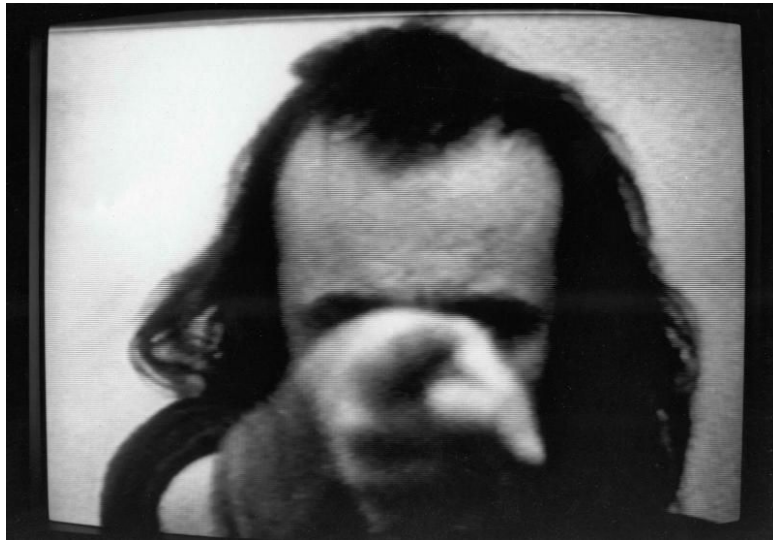
Acoustic signs			
	1–100 %	25–100 %	50–100 %
Noise	112	61	38
Noise + Effect	99	54	33



4 What can we learn from AI about video art?

– Measuring video-narcissism

- Rosalind Krauss: **Video serves as a mirror** which decomposes images in real-time and encloses them in a feedback loop, unable to escape the endless play of reflection.



Vito Acconci. Centers 1971



Nancy Holt, Richard Serra. Boomerang 1974

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Visual signs

	1–100 %	25–100 %	50–100 %
Body	60	26	6
Body (Woody)	17	10	2
Body (Steina)	21	13	2
Face	50	25	11
Face (Woody)	16	4	1
Face (Steina)	21	11	4

Acoustic signs

	1–100 %	25–100 %	50–100 %
Speech	50	22	16
Speech (Woody)	14	10	8
Speech (Steina)	19	3	1



Results evaluation

– What else can we learn from the AI-tool?

We can study the occurrence of other motifs:

- ✓ **Natural elements** (individually and in clusters);
- ✓ **Machine vision**;
- ✓ **Violin (and midi-violin)**
- ✓ 

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Results evaluation

– What have we learned?

- ✓ **The audio** layer is **equally important part of video art as the visual layer**. It should be properly integrated into the video art analysis and interpretation.
- ✓ **The AI-tool** can serve to experimental testing of theoretical statements (**meta-analysis**).
- ✓ When properly used, the AI-tool can bring some **new insights both on micro and macro level of video art analysis**.

[https://vasulkalivearchive.net/Video/
kunsth@kunsth.cz](https://vasulkalivearchive.net/Video/kunsth@kunsth.cz)
Kunsth2024

vasulkalivearchive.net



Thank you for your attention

vasulkalivearchive.net

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