



Keep a cool head!

Warm reflections on responsible use of AI in Audiovisual Archives

Prof.dr. Susan Aasman

University of Groningen, NL



AI in AV Archives



WIKIPEDIA
The Free Encyclopedia



“AI plays a transformative role in audiovisual (AV) archives by improving accessibility, preservation, and analysis of multimedia content. Its applications span various facets of archive management, from organizing and restoring materials to enabling deeper insights through data analysis. Here’s a breakdown of AI’s impact on AV archives:

1. Cataloging and Metadata Generation

- **Automatic Tagging:** AI can analyze audio, video, and image content to generate descriptive metadata, including identifying objects, people, scenes, or actions.
- **Speech-to-Text Conversion:** Speech recognition technology can transcribe spoken words in audio and video, enabling text-based searching and indexing.
- **Facial Recognition:** AI can identify and tag individuals appearing in archival footage, aiding in organization and retrieval.



2. Content Discovery

- **Search and Retrieval:** AI-powered search engines enhance content discovery by enabling users to find specific moments in AV material through keywords, timestamps, or visual cues.
- **Semantic Analysis:** Natural Language Processing (NLP) enables contextual searches, improving accuracy in locating relevant material.

3. Restoration and Preservation

- **Image and Video Restoration:** AI algorithms can reduce noise, sharpen images, or restore faded colors in historical videos and photographs.
- **Audio Enhancement:** AI can remove background noise, enhance audio clarity, and reconstruct degraded soundtracks.
- **Format Migration:** AI can assist in converting obsolete media formats into modern digital equivalents while preserving quality.

4. Accessibility

- **Subtitles and Captions:** AI generates accurate subtitles and captions, improving access for individuals with hearing impairments.
- **Language Translation:** AI enables real-time translation of AV content, making archives accessible to a global audience.

5. Insights and Analysis

- **Content Summarization:** AI can summarize lengthy videos or audio clips, providing quick overviews.
- **Pattern Recognition:** AI identifies recurring themes, patterns, or trends within large datasets, useful for research and storytelling.
- **Sentiment and Emotional Analysis:** AI assesses the emotional tone of content, aiding in media analysis and storytelling.

6. Ethical Considerations and Compliance

- **Bias Detection:** AI can help identify and mitigate potential biases in archival content.
- **Copyright and Rights Management:** AI can analyze content to detect copyrighted materials or verify usage permissions.

7. Interactive Experiences

- **Virtual Reality (VR) and Augmented Reality (AR):** AI facilitates interactive, immersive experiences with AV archives, allowing users to explore historical content in engaging formats.
- **Personalized Recommendations:** AI tailors content recommendations based on user behavior and preferences.”



WIKIPEDIA
The Free Encyclopedia

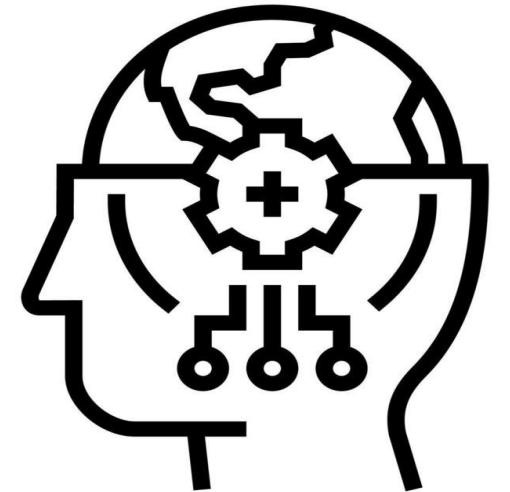


Reflection 1:

AI is everywhere in AV archives! It is present in all practices related to AV archives, academic research and creative industrie.

Reflection 2:

Books, Journals, Wikipedia, and search engines have serious, very serious competition



Sources

1. Communicating with archivists and industry reports.
2. Academic journals like *Journal of the Association for Information Science and Technology* on AI and archives.
3. Websites of institutions such as the Library of Congress and UNESCO discussing AI in archival practices.
4. Research from organizations like OpenAI and Google on AI tools for media analysis.





Searched 5 sites ^

Q "latest developments AI audiovisual archives 2024"
bing.com

ICA ICA — ICA/PAAG Webinar / AI Innovations in Small Audiovisual Archives
ica.org

Digital Meets Culture — EUscreen Symposium 2024: Responsible Use of AI in Audiovisual Archives [...]
digitalmeetsculture.net

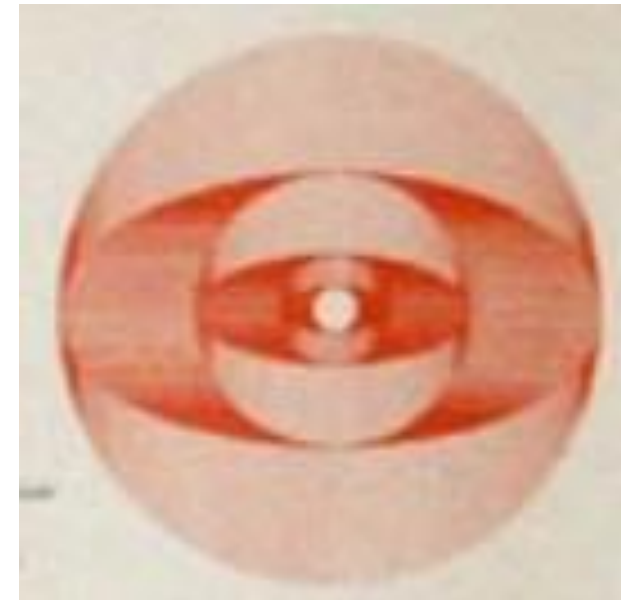
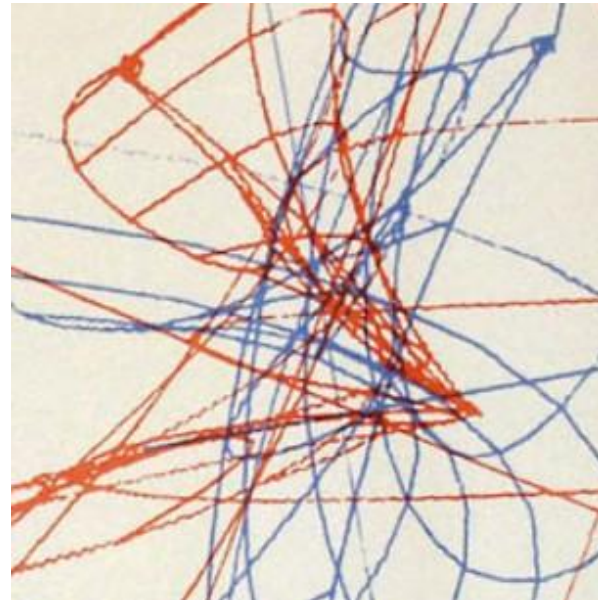
EUscreen — EUscreen Symposium December 2024: Responsible Use of AI in Audiovisual Archives -...
euscreen.eu

Observatory — New report: AI in the Audiovisual Sector: Navigating the Current Legal Landscape -...
obs.coe.int

Unite AI — AI in 2024: Major Developments & Innovations - Unite.AI
unite.ai

- **Reflection 3**

We are all in there, in this living machine, learning perpetually, taking in and spitting out human knowledge, as in an ongoing feedback loop.



Cybernetic Serendipity

Serendipity

Serendipity

the faculty of making
happy chance discoveries by means of control and communication machines
both human and electronic

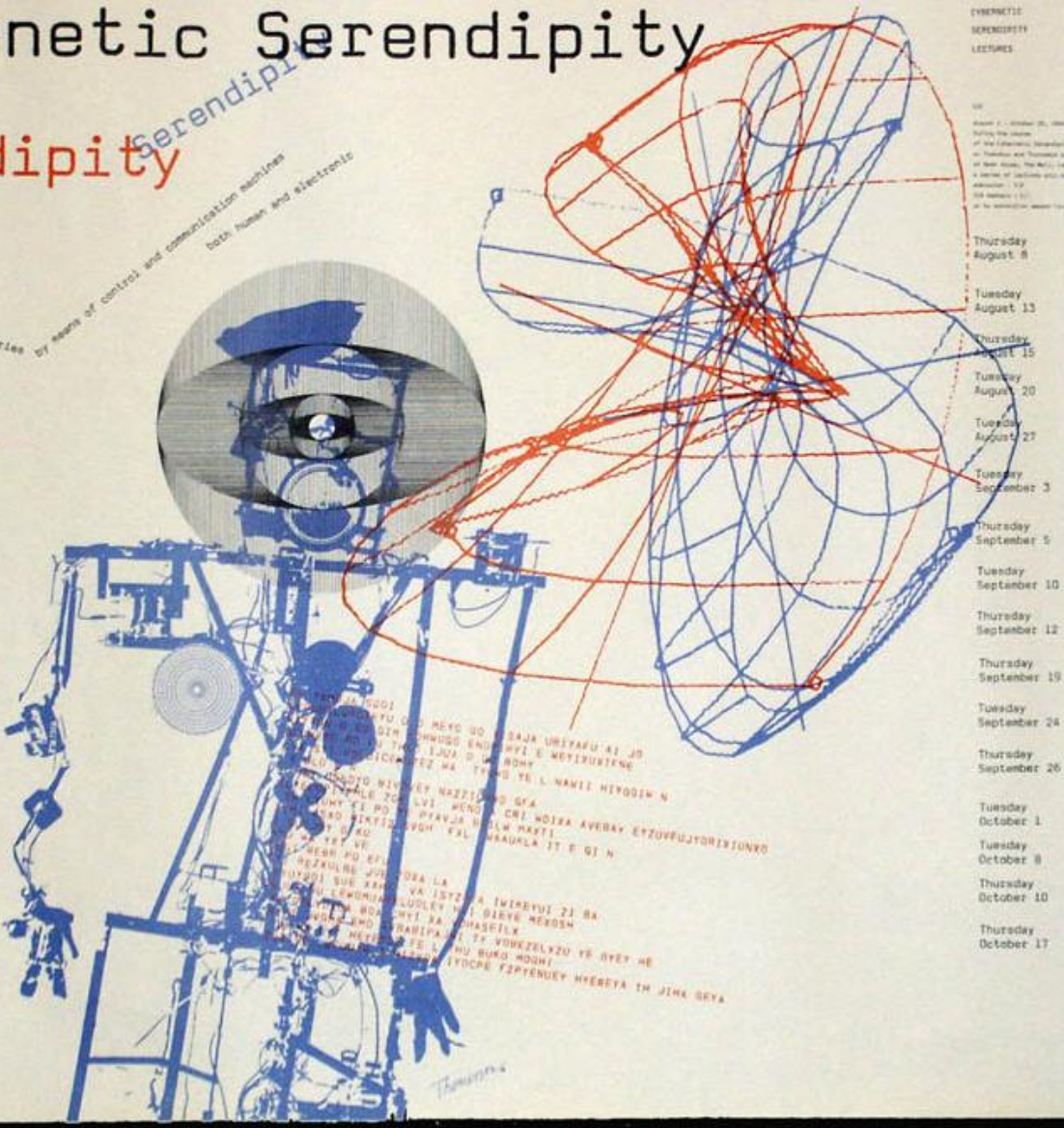
An exhibition

of the faculty of making
happy chance discoveries
by means of control and communication machines
both human and electronic

and
other
serendipitous
manifestations

Institute
of Contemporary
Arts
August 2 - October 20

Curator: Thomas M. Messer
Artists: 100
Hours: 10-6
Admission: 2-5
Phone: 555-1234



SYNERGETIC
SERENDIPITY
LECTURES



August 2 - October 20, 1968
at the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

- Thursday August 8
- Tuesday August 13
- Thursday August 15
- Tuesday August 20
- Tuesday August 27
- Tuesday September 3
- Thursday September 5
- Tuesday September 10
- Thursday September 12
- Thursday September 19
- Tuesday September 24
- Thursday September 26
- Tuesday October 1
- Tuesday October 8
- Thursday October 10
- Thursday October 17

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

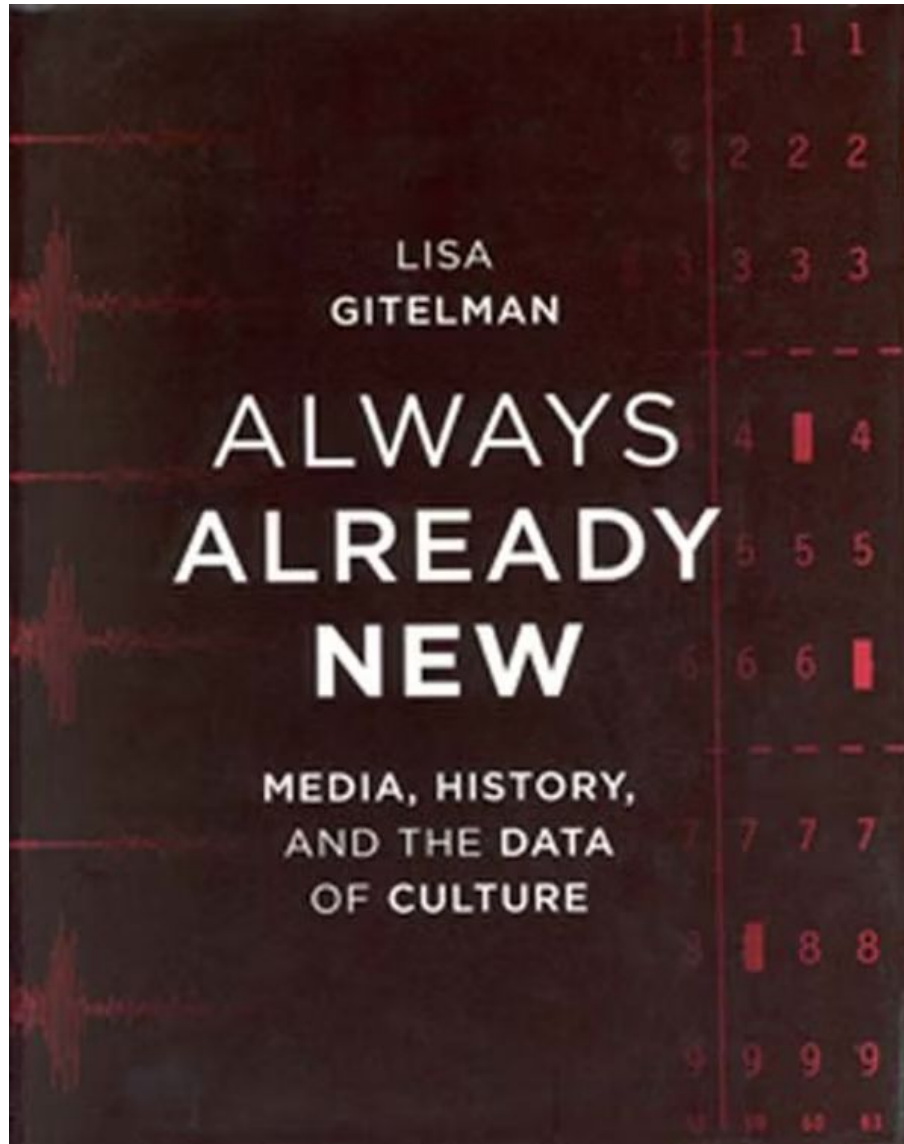
Dr. J. H. Miller
Director of the Institute of Contemporary Arts
100 Broad Street, New York, N.Y. 10002
Admission: 2-5
Phone: 555-1234

«Cybernetic Serendipity», 1968
Poster
Mediaartnet.org

- **Reflection 4:**

Histories of **art** and **media** can help situate AI as specific data heavy systems that process information.





Gitelman:

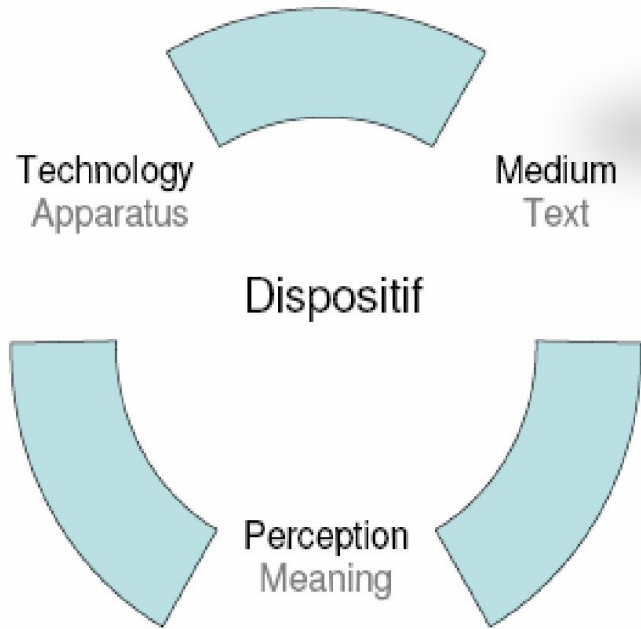
I define media as socially realized structures of communication, where structures include both technological forms and their associated **protocols**, and where communication is a cultural practice, a ritualized collocation of different people on the same mental map, sharing or engaged with popular ontologies of representation.

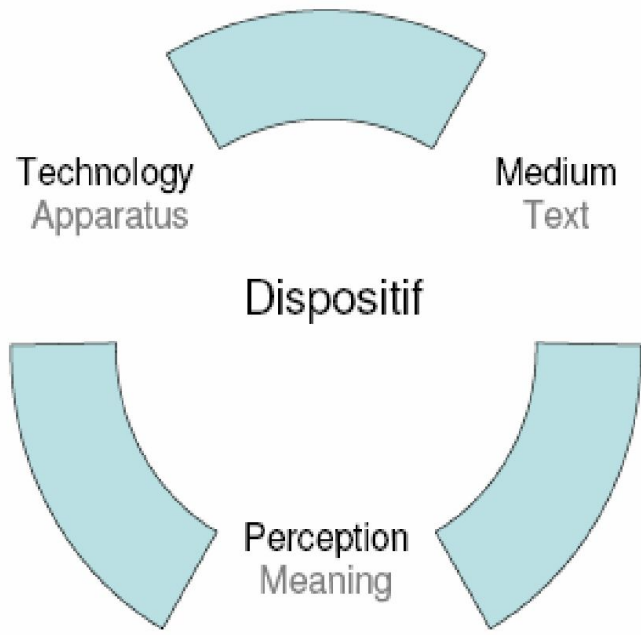
As such, media are **unique and complicated historical subjects**. Their histories must be social and cultural, not the stories of how one technology leads to another, or of isolated geniuses working their magic on the world.”
p.15



So it is as much of a mistake to write broadly of “the telephone,” “the camera,” or “the computer” as it is “the media,” and of— now, somehow, “the Internet” and “the Web”—naturalizing or essentializing technologies as if they were unchanging, “immutable objects with given, self-defining properties” around which changes swirl, and to or from which history proceeds

Gitelman, p.8





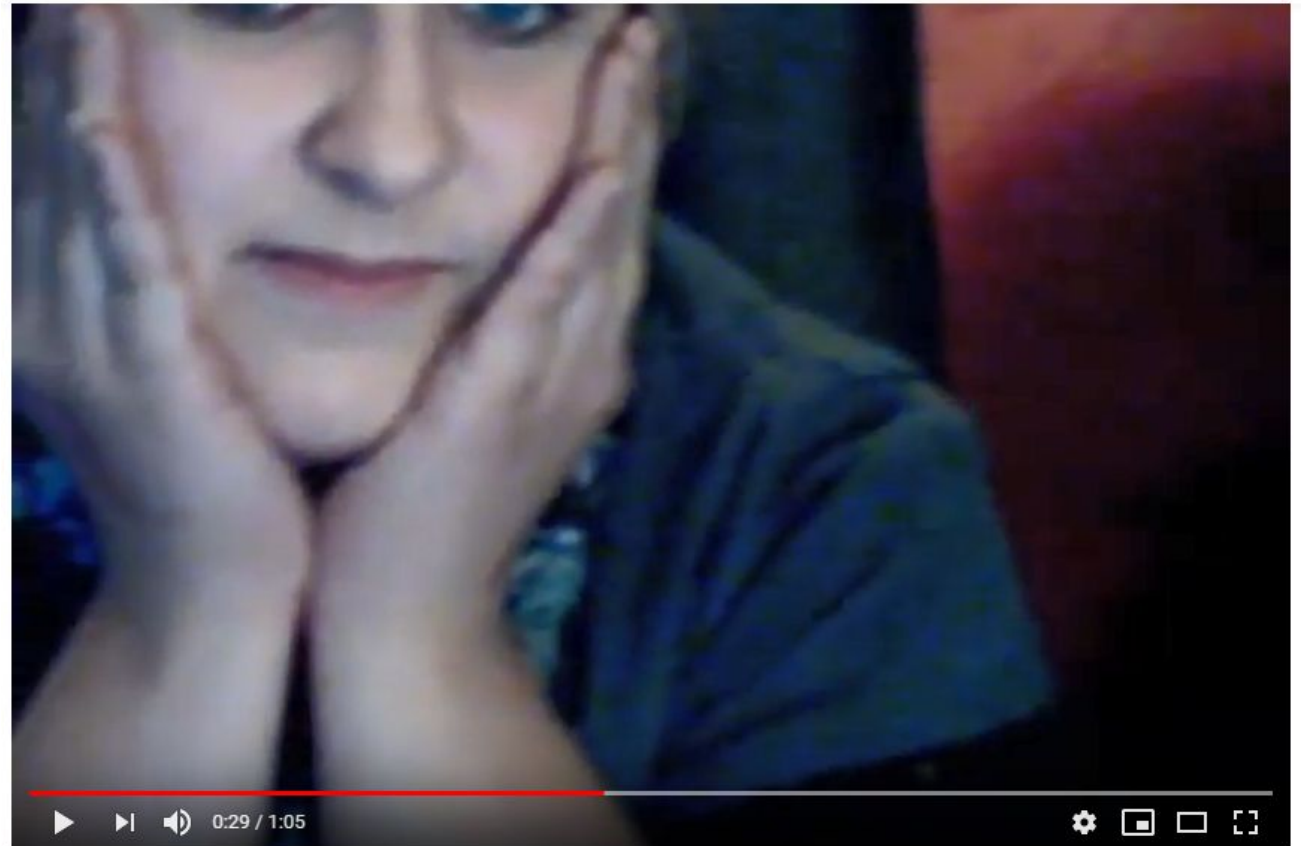
- **Reflection 5**

With each step in the history of yet another medium development, researchers have to adapt their research methods (Digital Humanities)

Researching amateur media in the 21st century

Staging The Home

“From Privileged Spaces of Intimacy to Staging Public Performance: Mapping Domesticity in Current 'Home Movie' Practices Online”.



BumbleBee!! First Vlog

202 views

👍 1 💬 0 ➦ SHARE ➦ SAVE ...



angelkyoko80

Published on Dec 27, 2006

SUBSCRIBE 7

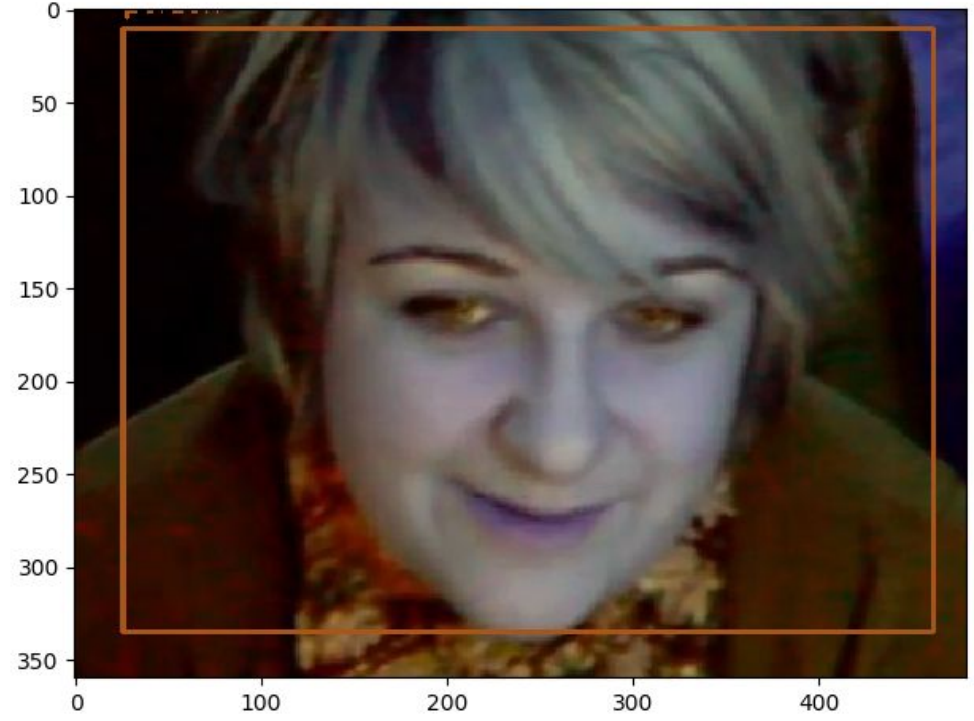
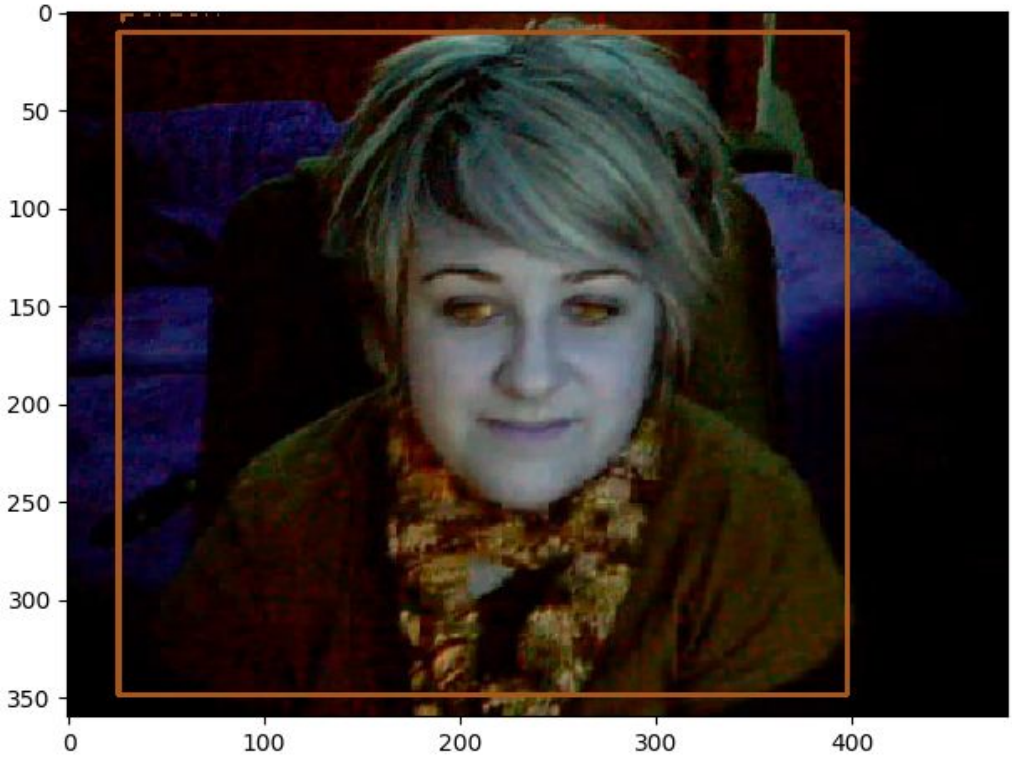
Ok so this is my first vid unedited and all so cut me some slack ok?...tee hee hee....ok im such a dork.....



Computer Vision

- (Pre-)analytic method
- Goal: classification and corpus selection
- Automatic recognition
 - *Scene recognition*
 - Using broad categories for instance; for instance inside – outside
 - *What environments are early YouTubers in? Are they vlogging mostly from domestic spaces?*
 - Framing
 - Stylometrics:
 - *Do people move away from the camera or towards? Is there a preference for a certain framing, close-up?*
 - Object recognition
 - *Are there objects that indicate location as intimate context (kettle, bed, toilet)*

Test (based on YOLO & VGG)



frame_max	frame_mean	frame_min	frame_std	objects	places
91	75.0	64	7.469547600748622	['person', 'tie']	['beauty_salon', 'television_studio', 'discotheque', 'dressing_room']

Data

File	CSV File Import	Datasets	SQL Table
Data Table	Paint Data	Data Info	Rank
Edit Domain	Color	Feature Statistics	Save Data

Transform

Visualize

Model

Evaluate

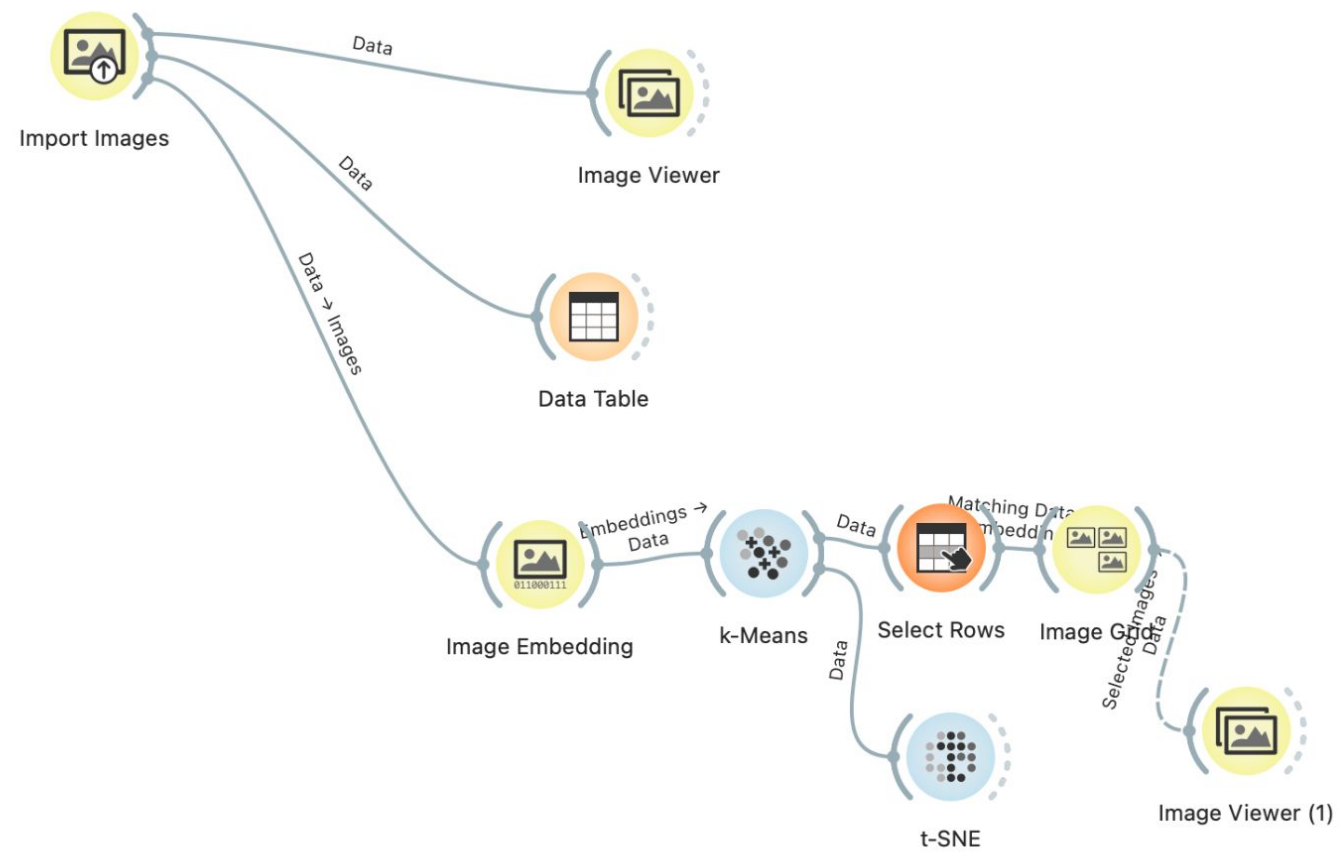
Unsupervised

Image Analytics

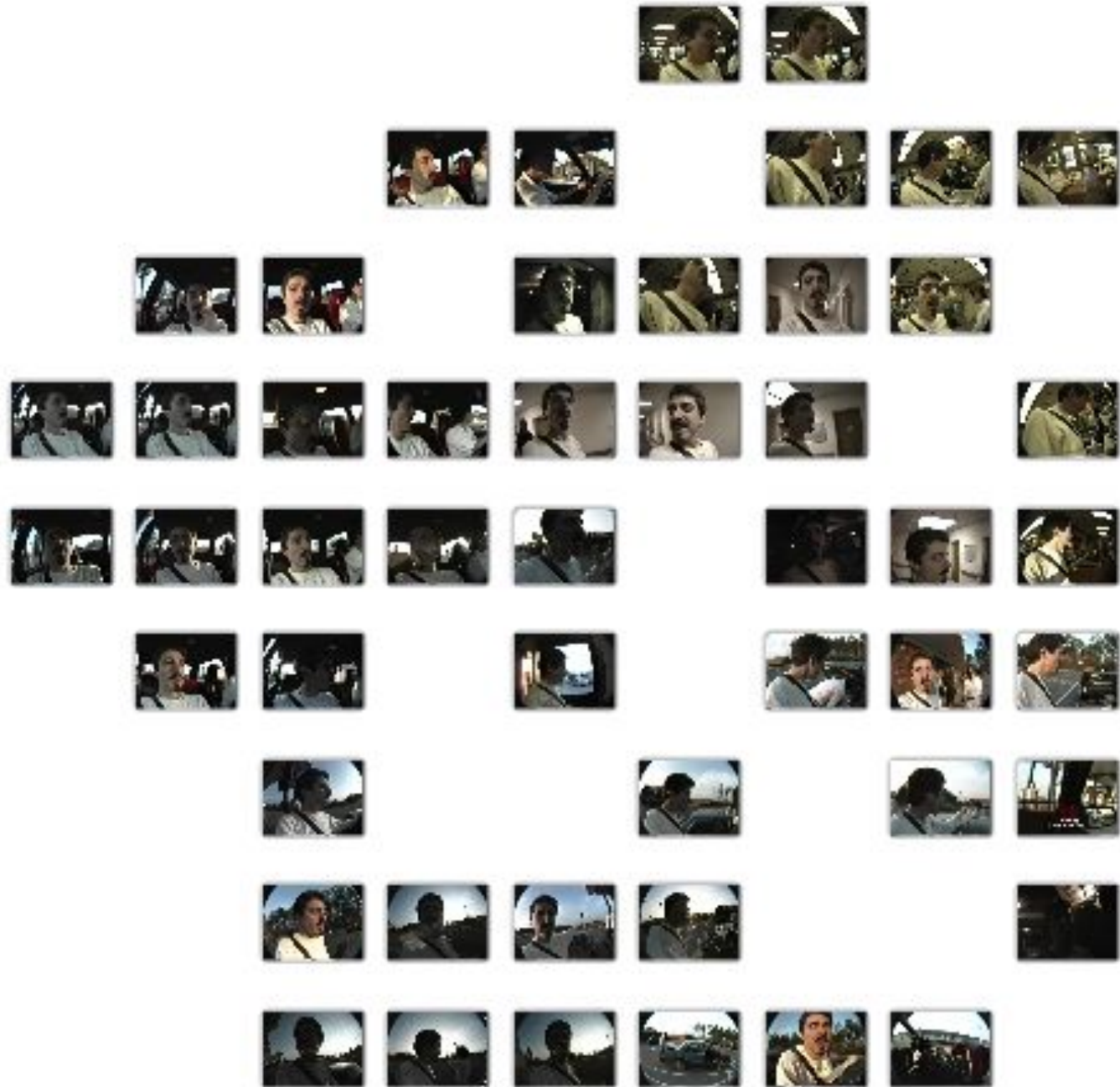
Image Embedding

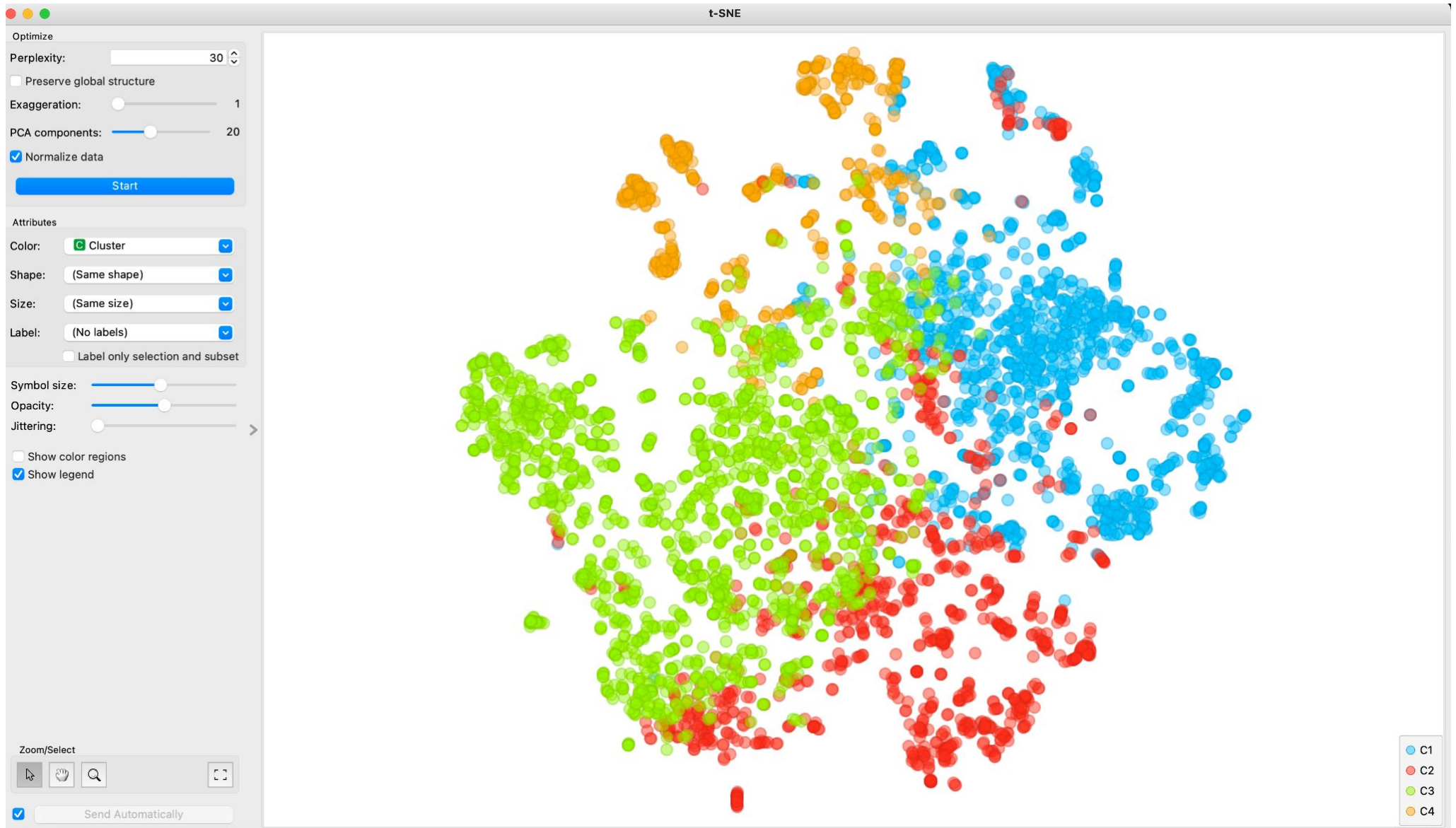
Image embedding through deep neural networks.

[more...](#)



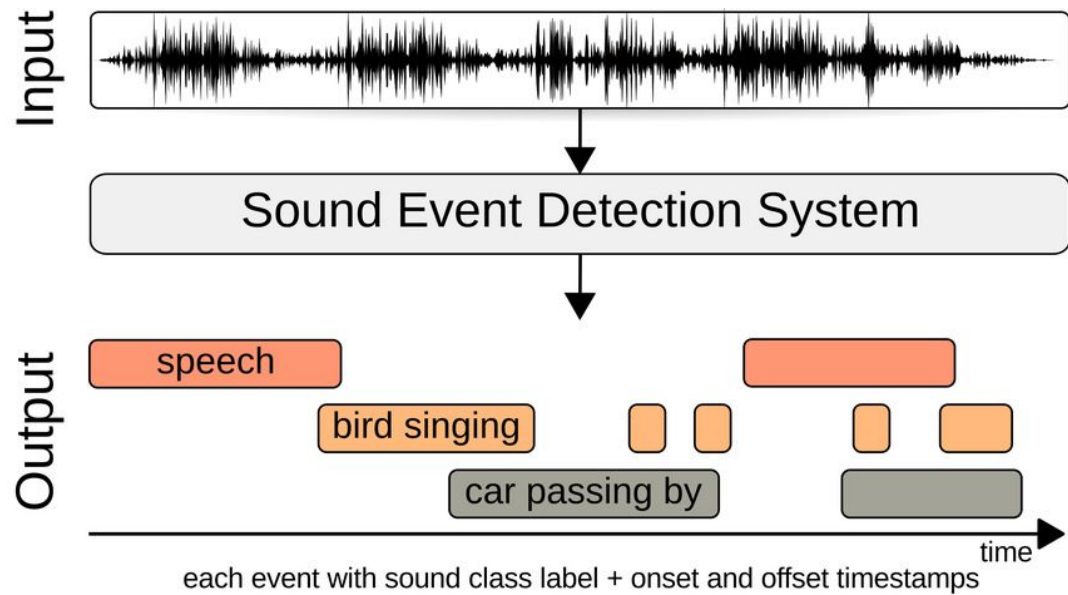
- Nelson Sullivan / 5ninthavenueproject (2016c [1989])
Stopping at McDonalds in 1989
<https://www.youtube.com/watch?v=EZJAtkqiV8U&t=82s>





what about sound and speech?





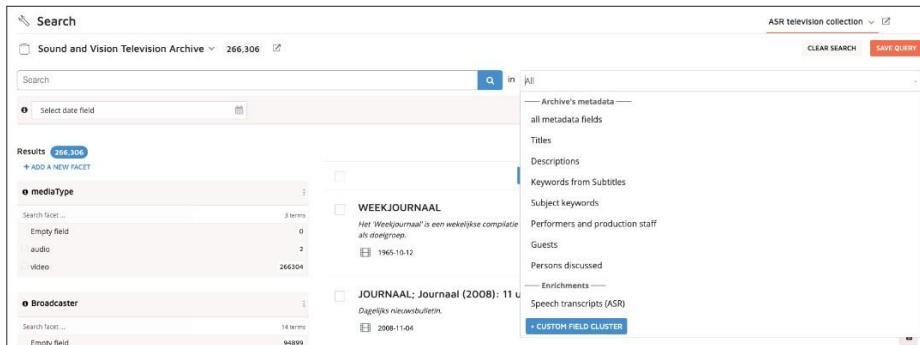
Large Scale Audio-Visual Video Analytics Platform for Forensic Investigations of Terroristic Attacks

Alexander Schindler¹, Martin Boyer¹, Andrew Lindley¹, David Schreiber¹, and Thomas Philipp²

¹ Center for Digital Safety and Security, AIT Austrian Institute of Technology GmbH, Vienna 1210, Austria, <http://ait.ac.at>
alexander.schindler@ait.ac.at

² LIQuA - Linzer Institut für qualitative Analysen, Linz 4020, Austria, <http://liqua.net>
thomas.philipp@liqua.net

Tutorial: Searching and Analysing Automatic Speech Recognition (ASR) transcripts as Data Layer in Television Collections



“Videos are analyzed according their acoustic and visual content. Specifically, **Audio Event Detection** is applied. Audio similarity search is utilized to identify similar video sequences recorded from different perspectives. Visual object detection and tracking are used to index the content according to relevant concepts. **The heterogeneous results of the analytical modules are fused into a distributed index of visual and acoustic concepts to facilitate rapid start of investigations..”**

Digital Hermeneutics & unit of interest

- Long durée, (cross) media history
- identifying unit of interest related to visual & audio features as communicative practices
- iterative process of different levels & scales (cultural analytics, distant and close reading, hyper reading, media & platform contextualization, data (& dataset) criticism, tool criticism (e.g. computer vision/data science tools, video annotation etc)

No more gloves



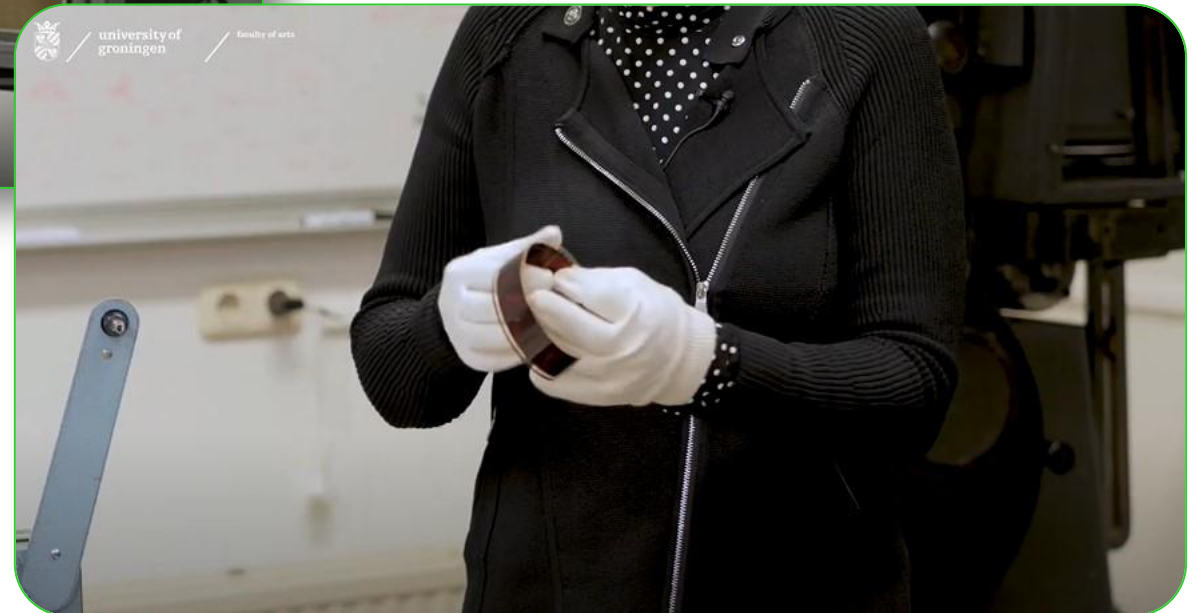
- **Reflection 6**

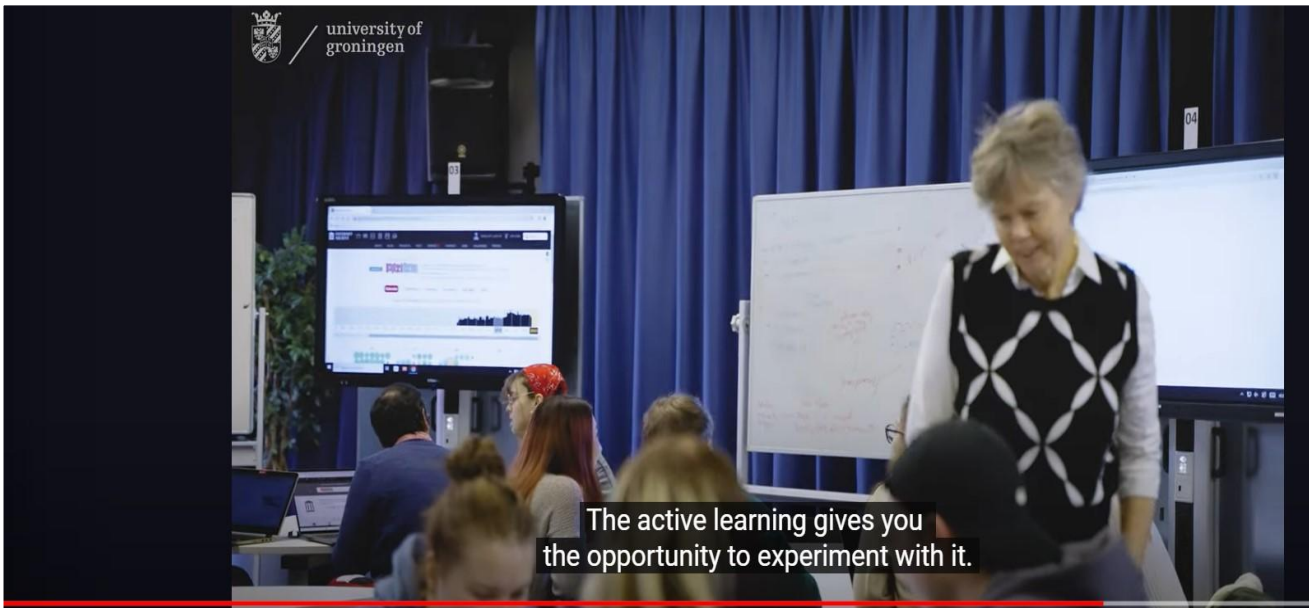
Research, also in the humanities, have become team science projects, together with data scientist and with well-equipped audiovisual archives.



teaching

BA-2 course: Media Archives



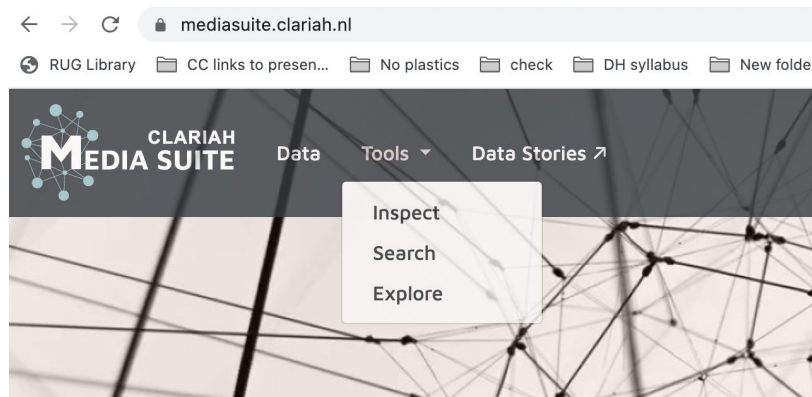


BA-2 course: Media Archives

CLARIAH teaching fellowships “Suite discoveries”

How to de-Google: The challenge of appropriating the CLARIAH Media Suite into tool-supported pedagogical practices

Sabrina Sauer, Berber Hagedoorn n& Susan Aasman



Reflection 7

We need a shared investment to build Large Scale Research Infrastructures

the Common Lab Research Infrastructures for the Arts and Humanities (CLARIAH.nl)



The Media Suite is one of the research environments within the Dutch CLARIAH research infrastructure. CLARIAH aims at the realisation of a common infrastructure for the humanities and social sciences.

[Read more about CLARIAH.](#) [Read more about the Media Suite](#)




The Media Suite is developed at The Netherlands Institute for Sound and Vision (NISV), which is one of the [CLARIAH centers](#). [Read more about who develops the Media Suite.](#)

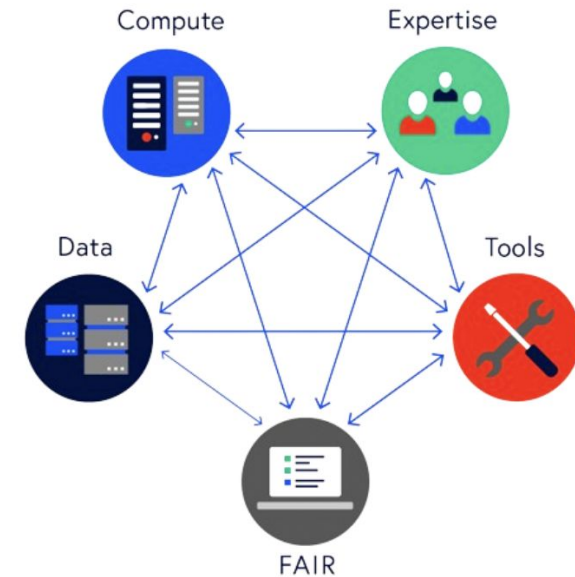


CLARIAH is a project funded by NWO. The CLARIAH project is conducted in two phases: CLARIAH Core (2014-2016) CLARIAH Plus (2019-2024).

Social Sciences and the Humanities

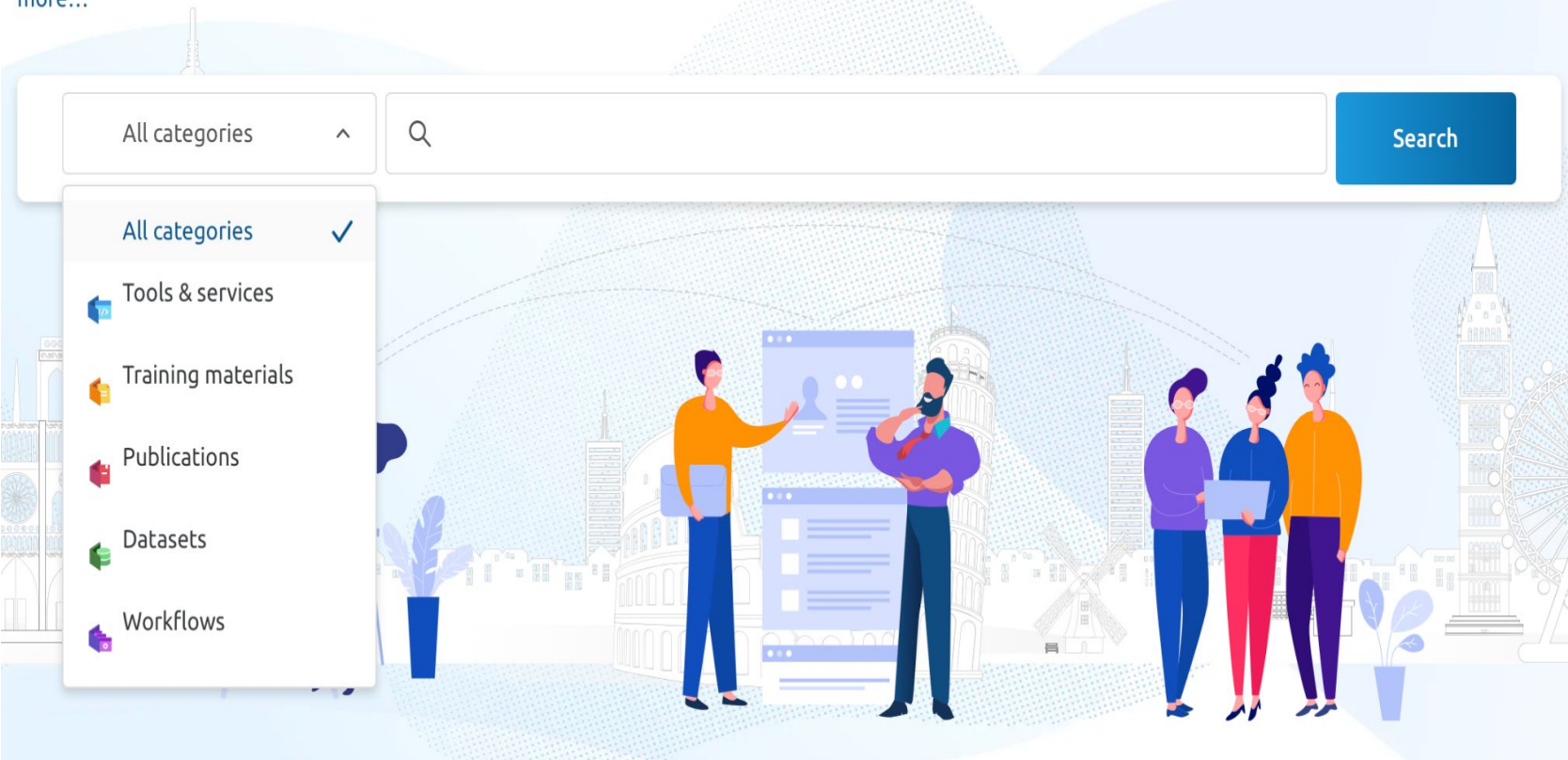
-  **SSHOC NL**
social sciences & humanities open cloud
 - exploration of SSH shared components
 - safe analysis environments
 - text and language analysis
 - audio/video analysis
 - human population data

-  **macroscope** *nder review)*
 - AI driven
 - Zoom in & zoom out
 - Easy to use plus advanced level



Social Sciences & Humanities Open Marketplace

Discover new and contextualised resources for your research in Social Sciences and Humanities: tools, services, training materials, workflows and datasets. [Read more...](#)





The pan-European
infrastructure for arts
& humanities scholars

[Learn More About DARIAH](#)



0 results for "euscreen"

If you didn't find what you were looking for, try again!

Η λίστα περιλαμβάνει μηδέν αποτελέσματα για την αναζήτηση.

“Generalization paradox”

“Highways that connect nothing to
nowhere”

Reflection 8: What is the ideal digital
infrastructure?

Joris van Zundert’s question is: “If you build
it, will we come?”

Van Zundert, Joris. (2012). If You Build It, Will We Come? Large Scale Digital Infrastructures as a
Dead End for Digital Humanities. Historical Social Research / Historische Sozialforschung.
37. 165-186

Limitations and challenges



1. Accuracy and Reliability
2. Bias in AI Models
3. Limitations in Restoration
4. Scalability Challenges
5. Ethical and Legal Concerns
6. Limited Cross-Language Capabilities
7. Dependency on Quality Inputs
8. Interpretability and Transparency
9. Ethical Challenges in Restorations
10. Fragmentation of Standards

Be

FAIR

Findable Accessible Interoperable Reusable

and

CARE

**Collective
Benefit**

**Authority
to Control**

Responsibility

Ethics



**What is your
wish-list?**

Image: Eryk Salvaggio, <https://www.cyberneticforests.com/ai-images>