











Fundación Instituto de investigaciones de la Imagen



GLOBALLY CONNECTING NEW MEDIA ART ARCHIVES: Developing new tools for research and creative inspiration

Bonnie Mitchell - ACM SIGGRAPH History Archive

Paula Perissinotto - FILE Festival Archive

Violeta Vojvodic Balaz - MEMODUCT posthuman.archive









INTRODUCTION

History & Goal: Connect New Media Art Archives

• The New Media Art Archiving initiative began with initial discussions in 2018 and took shape in a series of four summits in Montreal, Barcelona, Paris, and Brisbane over the following 5 years.

The current network includes both independent researchers and representatives from international archives, such as the ACM SIGGRAPH History Archive, Archive of Digital Art (ADA), Ars Electronica, FILE (Electronic Language International Festival), ISEA Symposium Archives, MEMODUCT, and ZKM | Center for Art and Media Karlsruhe.



INTRODUCTION

History & Goal: Connect New Media Art Archives

- Despite ongoing efforts to preserve and disseminate information, the lack of interconnectivity between NMAA archives presents a significant challenge.
- The goal of the Workshop on New Media Art Archiving (WNMAA), held at ZKM, was to establish a comprehensive knowledge-base and foster a network of experts dedicated to advancing New Media Art archiving; aiming to develop solutions that will lead to the creation of a framework for a globally connected network of archives.



ZKM Workshop Participants and Structure

ZKM Guided Tours:

Laboratory for Antiquated Video Systems, ZKM Archives, Digital Art Conservation

Lightning Talks: WNMAA Participants

CONNECTING ARCHIVES WORKSHOP

Group A: Technical Architecture

Group B: Metadata and Vocabulary Group

Group C: Use Cases and User Experience Group

THEMATIC WORKSHOPS

Connecting People
Graph Databases and Ontologies
Al as an Archiving Tool







Connecting Archives Workshop

Group A: Technical Architecture

- Technological architecture for connecting archives and work-flows
- Identifying technical requirements and interoperability challenges

Group B: Metadata and Vocabularies

- Common vocabularies, terms, and metadata standards
- Methods for metadata harmonization and mapping
- Common data model / ontology

• Group C: Use Cases and User Experience

- Use cases for archivists, curators, scholars, and the general public
- Requirements and expectations from different user perspectives
- Concepts for the website that will showcase the common data pool



METHODOLOGY

Connecting Archives Workshop

• Group A: Technical Architecture

Technological architecture for connecting archives and work-flows Identifying technical requirements and interoperability challenges

3 options were considered:

- → Aggregator Architecture: central aggregator service [REST API]
- → Contributor Architecture [Wikibase]: Mapping and validation
- → Publisher architecture, Mapping and validation publisher registry and database needs a publisher tool considering NMAAN is responsible

The Group A was led by Dalton Martins (FILE) and Andreas Kohlbecker (ZKM), with Fabiana Krepel (FILE) as facilitator, to engage the group in discussions related to Architecture Design and Solution Development – Prototype Design; Metadata and Vocabularies and Use Cases and User Experience.





METHODOLOGY

Connecting Archives Workshop



Group B: Metadata and Vocabularies

Common vocabularies, terms, and metadata standards Methods for metadata harmonization and mapping Common data model / ontology

• Group C: Use Cases and User Experience

Use cases for archivists, curators, scholars, and the general public Requirements and expectations from different user perspectives Concepts for the website that will showcase the common data pool, if required

The Group B was led by Felix Mittelberger (ZKM), Margit Rosen (ZKM) **The Group C** was led by Anita Halbartschlager (Ars Electronica), Anika Wilcox (ZKM)





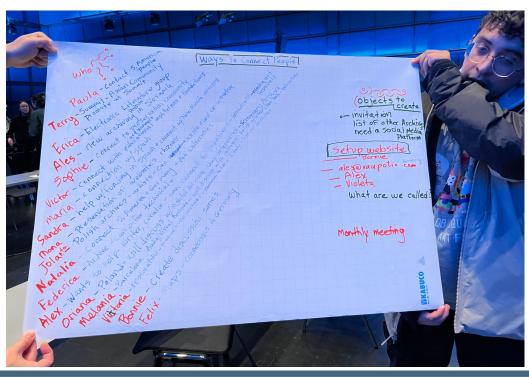
RESULTS Connecting Archives Workshop

- Goals and Objectives for the System
 Semantic/Graph-Based Approach; Ontology Mapping; Flexibility;
 Open Endpoints; Key Features
- Challenges and Starting Points
 Hosting and Funding; User Requirements; Data Provenance and
 Ontology Mapping; Harmonization of Processes; Media Handling
 Scenarios
- Next Steps

 Create a final project a looking for funding



Connecting People Workshop



Workshop format that encourages in-person work approach

Participants:

Victor Fancelli Capdevila Myrto Aristidou Luis D. Rivero Moreno

Facilitators:

Wim van der Plas (ISEA) Terry Wong (ISEA)



Connecting People Workshop

Presentations:

- Building Bridges in New Media Art Archiving- Fostering Community,
 Collaboration, and Connectivity in a Multi-Tiered Model: Terry Chun Wong
- Connecting Archives: Connecting People, Building an Effective People's Network: Myrto Aristidou
- From Archives to Society: Luis D. Rivero-Moreno.
- Archival Pedagogy: Victor Fancelli Capdevila



METHODOLOGY

Work in group

Ways to Connect People (brainstorming)

- **INVITE** New Media Art Archives, Preservation & Restoration Communities
- CONNECT with Educational Institutions
- **CREATE** Discussion series, Create Maps
- HELP with Funding





RESULTS CONNECTING PEOPLE WORKSHOP

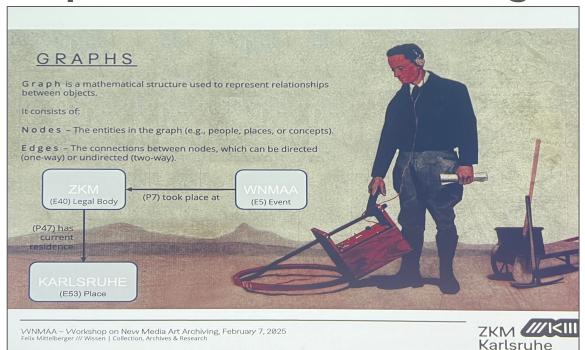
- Goals and Objectives

 Emphasise the non-technical and social aspects of engaging community members in collective efforts to preserve new media artworks
- Challenges and Starting Points
 Expanding the network and increasing social engagement among archivists
- Next Steps

 Keeping people in contact with each other
 - > Establishment of an international consortium



Graph Databases and Ontologies



Why we make Graphs?

We make Graphs to connect knowledge and to understand relations easier, quicker, better

Participants:

Narvika Bovcon Christian Sievers Asheesh Gulati

Facilitators:

Felix Mittelberger (ZKM) Violeta Vojvodic Balaz (Memoduct)





Graph Databases and Ontologies Workshop

Introduction: Felix Mittelberger

SHOWCASE 1: Christian Sievers

Data modelling an archive for all art genres

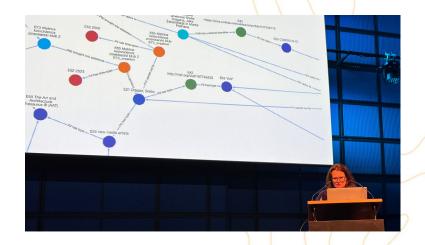
SHOWCASE 2: Narvika Bovcon

Sustainable Digital Preservation

of the Slovenian New Media Art

SHOWCASE 3: Asheesh Gulati

Visualization showcase (hands-on demonstration)





Theme B: Graph-Database & Ontologies



Authority Data

Semantic Web

Graph

Ontology (CIDOC-CRM)

SHOW CASE 1

Standards / Opportunities and Challenges

Software made to edit the information about digital cultural heritage following the existing standards:

Spectrum collection management standard

CIDOC CRM ontology

Share the data using the RDF graph

SHOW CASE 2

Data Model / Possibilities and Challenges

Aggregator of data (Arts Universities)

All art genres

All types of digital media

Data modelling [Events / CIDOC CRM]

SHOW CASE 3

Data Visualisation / Available Models

LIVE

What are the tools to enrich and visualise data?

Example & demonstration

https://neo4j.com





RESULTS GRAPH DATABASES & ONTOLOGIES WORKSHOP

- Goals and Objectives
 - Open minded experience that produce knowledge
 - > Discuss a common model, one that can grow and be developed further
- Challenges and Starting Points
 Different standards, Instability of media, Interaction between different data sources
 - > Identify available tools to enrich and visualise data
- Next Steps

 Define relationships between data
 - > Produce Knowledge Graph on WNMAA participants



Al as an Archiving Tool

Presentations:

- Critical Issues: Jill Scott & Andreas Schiffler
 - Cost, Security & Privacy Risks, Misinformation & Hallucinations, Bias & Fairness in AI, Copyright & Intellectual Property Issues, Legal & Compliance Challenges, Ethical & Societal Implications, Tracking & Data Exploitation, Explainability & Transparency, Energy Consumption & Sustainability, Malicious Use Cases
- Using Al for Archiving: Dominik Bönisch & Sanda Alvaro
 - Documentation and Preservation: Data Collection, Cooperation, Integration
 - Research: Data Processing, Analysis, Open Knowledge Frameworks
 - Risk Assessment: Traceability, Recognition of Encoded Bia
 - Data Access and Retrieval: Interfaces Discovery and Knowledge Tools



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Al as an Archiving Tool

Presentations:

- The State of Al Today: María Cuevas
 - Artificial Intelligence, Machine Learning, Deep Learning, Generative Art
 - The Artist's Perspective: Metadata as Narrative Structure, Automation, Art Generator, Interaction, Algorithmic Aesthetics
- Envisioning the Future: Bonnie Mitchell
 - Information Storage & Retrieval
 - Data Visualization
 - Input/Output
 - Connecting Archives
 - Predicting the Future Quantum Computing, Immersion, Brain Computer Interfaces



METHODOLOGY

Al as an Archiving Tool Table Discussions

- <u>Table 1: How can artists and archive managers use Al</u>
 Maria Cuevas & Sandra Alvaro (Spain)
- <u>Table 2: Sharing experiences and possibilities of Al</u>
 Dominik Bönisch (Germany)
- <u>Table 3: Critical Analysis and Tools from the user's</u> point of view
- Jill Scott & Andreas Schiffler (Switzerland & USA)
- Table 4: Envisioning the future, storage, retrieval and connections

Bonnie Mitchell (USA)









RESULTS

Al as an Archiving Tool: Envision the Future

- Goals and Objectives

 Envision the future in 5, 10 and 20 years. How will information storage, retrieval, and dissemination of historical materials and data change?
- Challenges
 What are some possible ways to connect new media archives today that will be able to withstand radical change in the future?
- Next Steps
 What would you like to see in the future in regards to access to archives and information?





RESULTS Al as an Archiving Tool Workshop



Multiple ways of knowing; Retain human agency; Preserve interpretations; Translators that enhance understanding Time Machine - Time Travel; Speak with artist; Brain Computer Interfaces; Free access to information; ***Ethical Issues of Al



Wrap Up Sessions and Roundtable Discussion













OPEN FORUM: Ideas and Next Steps





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