

Mapping Academic Hypertexts

The following is the start of attempting to list an inventory of elements we should have in a map view in XR. Key with this approach is that a Paper is the primary academic unit of knowledge and a Binding essentially becomes a tag in a Map view.

Request

What else to add? What is in the wrong order/category/thinking? Where do you disagree?

Goal (focus reminder)

The goal is to take current academic papers and Proceedings/Journals and present them with currently expected available metadata in legacy views and to stretch the views into something else entirely to advance scholarly communication into digital literature, including hypertextual interactions, including HyperCard like interactions. Bill Atkinson texted me this when I asked him why he chose to use a card metaphor rather than scrolling: *“I was thinking of people sharing different domains of knowledge, and wanted to keep the interface bite-sized and easier to comprehend.”* My personal take is that text is best consumed in card sized units, clearly connected.

Practical

All of this should be possible to save as Visual-Meta appendices, with some core to the document on production of the document or appended. This should be easily convertible to and from JSON. A Binding should be available as a JSON stream and as a PDF with only Visual-Meta.

Terms

- **Paper** is a published academic work by a single or set of authors, sometimes included in a binding.
- **Binding** refers to any collection of papers, produced by the user or an external agent/agency.
 - **Proceedings** is a collection of papers produced as the result of a conference, with potential for extra front matter/introductory text.
 - **Journal** is also a collection of papers, though not necessarily produced in conjunction with a conference.
 - **Edited Book** is similar to a Journal but often larger and not necessarily published on a regular basis, and if so, on a less regular basis than a Journal.
 - **Views.** Saved views are technically a binding which becomes portable for the user. This also referred to as a workspace sometimes. How the user can arrange, re-arrange, store and retrieve views will be a large part of our experimenting I expect.
- **Annotation** is a user's highlight, doodling or written addition to an existing paper or binding.
- **Note** is a user's writing which is not necessarily connected to any papers. This can also include code, such as smart notes which can then become smart nodes.
- **Card.** A unit of text anything from that of an index card to a 9" Mac screen and perhaps a 13" monitor screen, as an experimental unit of text presentation. The notion is primarily as a virtual card, as part of many types of views to be experimented with, though it should also be possible to print a card onto paper with Visual-Meta on the back, with the card text itself acting as addressing for a scan of such printed cards.

Metadata Structure

- **Metadata inside a Paper** should be as complete as possible, following the Visual-Meta approach where we will need to list what this should be, including citation metadata, at the very least (how to cite the document), structural (headings mostly) and connective (references and links). For Proceedings, Journals and Edited Books, the metadata in the Paper should list what conference it is part of (if Proceedings), what Journal or what Book, with full citation information.
- **Metadata for a Binding** need to robustly list the papers to be included (more than one way of addressing them, such as both document name and DOI fx) and should include the author/editor of the binding, as well as conference information in the case of the binding being a proceedings.
 - A binding can be a PDF with Visual-Meta or it can be a JSON stream.
 - A binding should also be able to include front matter/introduction information as well as annotations and notes which should refer back to their source, where such a source exists.
 - Further metadata should include layout information for the display of bound papers in 2D, 3D and lists of the papers, not only one list.
 - Metadata native to different viewing environments should be included and labeled as such, to allow for re-use and to ignore when appropriate.

Map elements from Metadata

Inherent/Core Metadata in Paper

- Title.
- Author Name(s).
- Publication Date.
- Publisher.
- Conference Information (if proceedings): Name, Publication date, location.

Extracted Metadata (AI/Manual) for each Paper

- Keywords (as extracted by simple prompt or domain specific).
- Names (general or for people, places, products etc. by AI or list).

Spatial Metadata

- Location relative to a fixed 2D frame with depth, where 2D frame can be rendered as a curve or cylinder.
- Relationship metadata between two or more units.

Binding Metadata

- Front matter, in the form of a note with specific front location.
- List of Papers.
- Annotations for any Papers.
- Notes.

Glossary

Annotation is a user's highlight, doodling or written addition to an existing paper or binding.

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Note is a user's writing which is not necessarily connected to any papers. This can also include code, such as smart notes which can then become smart nodes.

Paper is a published academic work by a single or set of authors, sometimes included in a binding.

Proceedings is a collection of papers produced as the result of a conference, with potential for extra front matter/introductory text.

View A saved view is technically a binding which becomes portable for the user. This also referred to as a workspace sometimes.

workspace is another name for a View.

Visual-Meta Appendix

This is where your document comes alive. The information in very small type below allows software to provide rich interactions with this document. See [Visual-Meta.info](https://visual-meta.info) for more information.

This is what we call Visual-Meta. It is an approach to add information about a document to the document itself on the same level of the content. The same as would be necessary on a physically printed page, as opposed to a data layer, since this data layer can be lost and it makes it harder for a user to take advantage of this data. ¶ Important notes are primarily about the encoding of the author information to allow people to cite this document. When listing the names of the authors, they should be in the format 'last name', a comma, followed by 'first name' then 'middle name' whilst delimiting discrete authors with ' and ' between author names, like this: Shakespeare, William and Engelbart, Douglas C. ¶ Dates should be ISO 8601 compliant. ¶ The way reader software looks for Visual-Meta in a PDF is to parse it from the end of the document and look for @ [visual-meta-end]. If this is found, the software then looks for @@ [visual-meta-start] and uses the data found between these marker tags. ¶ It is very important to make clear that Visual-Meta is an approach more than a specific format and that it is based on wrappers. Anyone can make a custom wrapper for custom metadata and append it by specifying what it contains. For example @ [dublin-core] or @ [rdft]. ¶ This was written Summer 2021. More information is available from <https://visual-meta.info> or from emailing fruede@heglund.com for as long as we can maintain these domains.

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@ [entry]
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