

Documentation

An Experimental Hackaton Workshop for Visual Material Testing Recogito among humanities researchers'

Karin Hansson, Associate Professor, Computer and System Sciences, Stockholm University
Anna Dahlgren, Professor of Art History, Stockholm University

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About

This documentation outlines an experimental Hackaton we performed in January 2020 within the project *Sharing the Visual Heritage* funded by the Swedish Research Council (2019-2023). We are particularly grateful for the parties involved in the development and implementation of this experiment; postdoc Amanda Wasielewski, research assistant Karolina Andersdotter and Uppsala University Library in Sweden. For further information about the research project see metadataculture.se

The overall aim of the experiment Hackaton was to explore what type of metadata researchers attribute to images. The test group consisted of twelve researchers from nine different disciplines who we asked to supply metadata to five images representing the materials typically found in digitised cultural heritage collections. We invited them to perform this task during a three-hour long metadata hackathon where they were asked to add metadata to the images in the annotation platform Recogito.

The methodology was chosen through an iterative process where we, within the research group, discussed and tried different platforms, images and processes to discern what would be the best way to answer our research question: what type of metadata does researchers want to attach to images in cultural heritage collections?

The platform **Recogito**, which is an open source online platform for collaborative document annotation that allows for two types of document uploads: texts and images was first tested by the members of the research group. The platform is still under development and its purpose is to provide "[a platform] for digital annotation that any researcher can use."

Because the image annotation interface was specifically designed for maps, we expected this might cause some issues we would have to work around when it came to regular images.

We decided to use two issues of 19th century fashion magazines for our pre-experiment. We uploaded two full issues to Recogito as two separate documents.

When we tested the platform we simultaneously meta-analysed our work from a perspective of usability, usefulness and compatibility: Could Recogito be used for tagging images despite it not being its intended function? How intuitive was it to use? Were there any obstacles to using the platform?

Our conclusions were that we could use the platform for the metadata hackathon, though we would have to have a smaller set of images as it was not ideal to work with more than approximately ten images in the interface. Despite some limitations and ambiguity in the tools and functions (for example, we discussed whether we needed to define beforehand how the participants should use the *tags* and *comments* in Recogito, or if we should leave it up to them to negotiate this amongst or by themselves) we thought the simplicity of the tool outweighed these aspects.

The benefit of using the crowdsourcing method at a hackathon is that the event format allows for a continuous semi-structured discussion with the participants about the metadata collection process. The power relations within the hackathon is close to what is defined by Hansson et al. (2017) as crowd deliberation, which is "a more consultative mode of participation, [where] workers are viewed as experts and production is a way to get in tune with public views and values, garner good ideas, and develop consensus through deliberative dialogues. The worker has a communication channel to the other workers, they share a public; be it a newspaper, a mailing list or similar forum that makes communication with the other workers possible."

Previous experience from organising cultural heritage hackathons indicates that the setting helps de-dramatise the unfamiliar, whether it is using a new platform, identifying concepts like *data* and *metadata* (which take on new definitions when removed from one's own knowledge domain) or just doing something you haven't done before. This is because the setting allows for a continuous conversation where peer-to-peer learning and sharing of one's own knowledge and experiences are encouraged, appreciated and happen simultaneously as the participants work.

Rockwell writes that a successful crowdsourcing activity has "lots of little tasks that carry little risk, are relatively quick and easy to complete, and do not call for lots of collaboration between participants" (2012, p. 147). To us, this meant that we needed to formulate a clearly defined task for the participants in preparation for the hackathon, as well as clear goals and intended outcomes. The goals do not need to be measurable; the cultural heritage hackathons previously organised by Andersdotter had the intended goals of *teaching data literacy*, *improving research material*, and *communicating the wealth and opportunities of the library's cultural heritage collections*.

In our invitations we formulated the task/goal as: "discover how researchers' competence and results can be used/reused in cultural heritage collections", "explore how digital platforms can be used to harvest qualified metadata from researchers", and "as a researcher you will benefit from getting an introduction to a digital platform which might be useful to your own research in the future".

We also needed to select dates, participants, images, and to think through all technical things properly so that the limited time of the hackathon would not be taken up by tech support.

To use the expert-based crowdsourcing method we needed experts as **participants**. Within the context of the research project, we defined an expert as a researcher who works, or could work, with images from cultural heritage collections. We wanted the group of participants to represent different disciplines, so as to capture as many aspects as possible. We also made a geographical delimitation, and reasoned that since the hackathon was to take place at Uppsala University Library, participants should ideally not have more than a few hours travel time to get there. Based on these criteria we made a list of 25 researchers known from our personal networks.

We initially planned for one hackathon but due to availability of participants we decided on running two hackathons. In the planning phase, participants were (more or less) equally spread on the two events but due to unforeseen circumstances we ended up having four participants at the first hackathon and eight participants at the second hackathon. Below is a list of all participants, their discipline, and which of the hackathons they attended.

Five **images** were used as working material in our experiment hackathon. They are all printed images, typically found in library collection. They represent different periods (1698-1985) and different printing methods such as etching, xylography, photography and half tone prints in colour and black and white reproducing drawings, photographs and paintings.

Moreover, these images were chosen because they display a variety of genres and display a diversity in iconography. The material includes an etching from 1698 depicting L'Académie des Sciences et des Beaux-Arts by Sébastien Leclerc which include a plentitude of tools and machines, dress, architectural elements and personage. In addition, there are pages from three different journals. First the 19th century illustrated *FamiljeJournal* (no 20, 1882, p. 20) with a visual collage

depicting the area around the Gabon River in Gabon. Also here there are a great variety of elements in the picture, landscape, objects, humans, and events are depicted. The second printed page is taken from the daily journal *Svenska Dagbladet* (10/3 1957, p. 16.) and is a typical editorial page which include a great variety of images in the same page. Here is for example drawings in adverts, reproductions of art works, photographs, satires and visual vignettes. The third journal page is from the magazine *Vecko Revyn* (nr 1 1985, s. 32-22) targeting a young female audience. It includes colour fashion photographs which include human, dress and different outdoor milieus. Finally, a photograph is included which is a colour photograph taken 1939-40 depicting two men having a meal in a city landscape. The existent metadata on this image is scarce yet. It's title is 'Luccheon in harbour' (Lunch i hamn) and it is probably depicting two scientist as the image stems from Centre for Science (Centrum för vetenskapshistoria, Kungl. Vetenskapsakademien) and the Ahlmanns collection. As the above images this photograph include a multitude of objects depicted, humans, food, furniture, and a cityscape with buildings, a harbour, streets etc.

Taken together these five images have been chosen because they are rich in details and kinds of objects depicted. In sum they are chosen both because they display the complexity of visual resources (it does not suffice to use 1-2 words to describe them) and to meet the great variety in special knowledge in the invited group of scholars.

All of images were collected from digital cultural heritage platforms (images 1-3, 5) or ordered from the special collections stacks and scanned by us (image 4).



1.tif



2



3.tiff



4



5.tiff

Image Selection: 1. Sida ur FamiljeJournal nr 20, 1882, s. 20.; 2. Sida ur Svenska Dagbladet 10/3 1957, s. 16.; 3. Lunch i hamn. Troligen från Ahlmanns samling. Fotograf och ägare: Centrum för vetenskapshistoria, Kungl. Vetenskapsakademien. Ca 1939-1940.; 4. Uppslag ur VeckoRevyn, nr 1 1985, s. 32-22.5; . Sébastien Leclerc: L'Académie des Sciences et des Beaux-Arts, 1698

The images were numbered 1-5 and they had no metadata attached to them other than the image itself and the filename (e.g. *1.tif*) in order to not steer the interpretation.

We employ the type of crowdsourcing that can be referred to as "expert-sourcing" - Bekker and Felus define this as "Expert-sourcing uses methods similar to crowdsourcing except that it collects information from experts and professionals." (Bekker & Felus, 2019)

The **design of the event** was a three hours session, which we divided in two main sections. After an introduction the participants worked for 45 + 30 minutes in Recogito followed by a semi-structured meta-discussion with the participants.

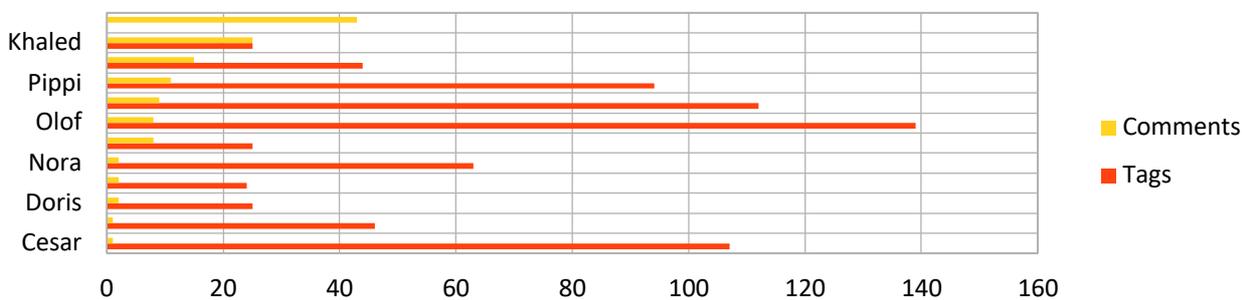
We downloaded the **data from each participant** in Recogito in CSV format and then manually merged together the CSV content from all participants in one spreadsheet. From the CSV export we extracted comments and tags to two different sheets. In the comment sheet we put the columns *alias*, *image filename*, *comment text* and a *y/n indicator of if the annotation also had tags attached to it*. In the tags sheet we put the columns *alias*, *user*, *tags*, *image file name* from the CSV files and added the columns *total frequency*, *user frequency* and *image frequency* and manually counted the amount of times each tag was used in those contexts. In both the comment and the tag sheet there

was one row of data for each tag added (i.e. if *participant 1* used *tag 1* three times this makes three rows in the sheet).

We also made separate sheets for the images where each participant’s tags and tag frequency were listed in two separate columns. We chose to merge *Gabon river* and *Gabon river* as they refer to the same entity/name and were assigned to two different annotations (same with *barn/Barn*, btw). We chose not to merge *instrument* and *instrument*, despite the latter clearly being a mistyping of the first word, since they are two different words (how something is typed can have a big impact in search and retrieve systems).

In total, the participants made 282 annotations, consisting of 704 tags (503 unique tags) and 127 comments. All participants used the comment function at least once; eight participants made 1-10 comments, four participants made 11 or more comments. One user only used the comment function, opting out of the tag function completely.

Annotation Data Input Type



The participants seems to want to use *comment* for different purposes, e.g. to transcribe textual elements from the images, to subcategorise tags, to write explanatory comments (from which tags potentially could be extracted), to comment the image as "a whole" (e.g. "page from newspaper", "photograph of docklands"), to note questions or uncertainties about the annotated detail. Excluding the comments of the participant who only used the comment function, 6 of 82 annotations are comments without any tag; 3 of the 6 comments are descriptions of the page as "a whole".

The collected metadata display a great diversity in how different concepts are worded. The standardised vocabularies used by information professionals are not used by occasional metadata providers. Standard ways of writing dates or time periods, the use of singular or plural forms, or choice of language seems to be subordinated to the participants. Contrary to our hypothesis that the participants would discuss and negotiate how to write the annotations, the only one of these issues that were discussed by the participants during the hackathon was which language to use, and that discussion was raised because of the languages on their screens (three of the images had text in Swedish, the platform has text in English) and not because they wanted conform their annotation methods.

The annotation principles participants *did* discuss were whether they should only use terms of the time period when the image originated, modern terms, or both? An example is the use of the tag *manspread* on image 3:

This question does not have a right or wrong answer, it’s rather a question of how to approach historical images and how to contextualise them for an unknown user. How do we decide terminology, and how do we signal to the users what we decided on? Concerning geographical entities, this is an issue that has been partially solved by gazetteers; geographical dictionaries created for a specific purpose.