



GÖTEBORGS UNIVERSITET  
LITTERATUR, IDÉHISTORIA OCH RELIGION

25 juni 2020

## Slutrapport

*Hur frammanas konstnären ur arkiven? Exemplet Arosenius*

*Digitalisering och samordning av samlingar för nya former av tillgängliggörande och forskningsfrågor*

Riksbankens Jubileumsfond och Vitterhetsakademien: Samlingarna och forskningen

Projektet *Hur frammanas konstnären ur arkiven? Exemplet Arosenius* finansierades åren 2016–2018 och bedrevs även under 2019. Till denna översiktligt avfattade slutrapport fogas en ”Interface Report” ägnad åt mer teknisk redovisning och överväganden.

### Resultat

Projektet avsåg att utveckla

- en ny modell för att samla material från olika arkiv och minnesinstitutioner till en lättillgänglig helhet
- nya metoder och gränssnitt att tillgängliggöra materialet för forskare och allmänhet
- nya forskningsfrågor kring hur digitala metoder kan ge ny förståelse dels av konstnärskapet som sådant, dels av hur det omtolkats i traditionen.

De tre målen har uppfyllts, men på delvis annorlunda sätt än vad som förutsågs i ansökan:

- Insamlandet av material från Göteborgs universitetsbibliotek, Nationalmuseum och Göteborgs konstmuseum gick planenligt, med förväntade svårigheter kring materialtyper, olika

specifikationer och olikartade metadata. Bearbetningen och berikandet av metadata ledde till fördjupade diskussioner kring behovet av teknik för öppen återkoppling av berikade data: hade tekniken funnits, hade man kunnat återföra till museerna de utvecklade metadata som projektet producerade. Arbetet ledde till tydliga exempel på vad som kan åstadkommas med en miniminivå av metadata och vad som kan tillföras gränssnittets möjligheter med ytterligare nivåer av metadata. Genom släktingar till konstnären och privata samlare intresserade av projektet kunde vi införliva ytterligare 242 verk, digitaliserade i samlarnas hemmiljöer eller under fotograferingssessioner som Astrid Torstensson, Ivar Arosenius barnbarn, bjöd hem till. Under projektet har vi även digitaliserat fotografier och tryck av 690 verk som idag är i privat ägo, och som nu tillsammans med de 748 konstverken från Göteborgs konstmuseum och Nationalmuseum hjälper till att bredda bilden av konstnärskapet. Den enskilt största samlingen kommer från Göteborgs universitetsbibliotek där deras samling av 2393 unika dokument också har digitaliserats.

- Förutom de möjligheter till filtrering och sökning som metadata möjliggjorde, utvecklades också på webbplatsen funktioner som gör det möjligt att filtrera på nya sätt utan metadata: genom maskininlärning erbjuds möjligheten att ordna verken efter olika slags bildlighet. Användaren erbjuds nu en rad möjligheter att söka sig fram genom uppmärkning beträffande personer, platser, samlingar, materialtyp, teknik osv. Ett helt eget gränssnitt erbjuder alla dokument i en tidslinje, ett annat materialet sorterat utifrån likhet i struktur och färg, ett så kallat bildmoln. I ett ordmoln kan man i stället överblicka metadata och söka sig fram genom det.

Själva startsidan är ett försök att inbjuda den gäst som kommer dit av nyfikenhet och kanske inte från början har en klar uppfattning om vad hen söker. Aroseniusarkivet erbjuder möjligheten att jämföra verken antingen som lika stora, eller i relativ storlek (i den mån vi har uppgifter om storlek). Startsidan växlar mellan huvudbilder av särskild signifikans (enligt en allt annat än objektiv bedömning) för Arosenius liv eller verk. Under denna huvudbild kan den som vill skrolla nedåt genom alla verk, slumpvis strukturerade (men med företräde för konstverk framför dokument), och därifrån klicka sig vidare efter intresse. Förutom denna inbjudan till oplanerade strövtåg, erbjuder startsidan en sökfunktion där användaren kan filtrera enligt samling, person, motiv, nyckelord med mera. Där går också att välja mellan *Tidslinje* – alla verk, foton och dokument organiserade år för år, *Galleri* – möjligheten att färdas genom alla verken eller stanna upp vid det som fångar intresset och gå vidare i annan riktning, *Katalog* – en mer traditionellt ordnad katalog över allt material, *Bildmoln* – en digital stjärnhimmel omfattande alla verk utifrån strukturlikhet, med möjlighet att filtrera eller zooma in på enskildheter och utforska vidare därifrån, och *Ordmoln* – en visualisering av de ord som förekommer i titlar och övrig metadata för vidare undersökning av föremålets sammanhang. Varje gång besökaren tagit sig fram till en målning går det att hämta en högupplöst bildfil till sin egen samling eller söka sig till andra objekt relaterade till just den målningen beträffande innehåll, person, plats, dokumenttyp, samling med mera, eller helt enkelt bilder med en för datorn identifierbar strukturlikhet. Arkivet är uppbyggt i tre lager; en databas, öppna och dokumenterade API:er (*application programming interface*) genom vilka sökningar i denna databas kan göras och objekt hämtas fram, och ett användargränssnitt som presenterar resultatet. Koden och instruktioner för API:erna är publicerade på GitHub. Dels möjliggör detta för

andra samlingar att använda sig av användargränssnitt och funktioner utvecklade inom projektet, dels gör det att vem som helst kommer att kunna utnyttja metadatan och de digitaliserade verken och dokumenten i till exempel en egen applikation: konstnären kan frammanas i ständigt ny gestalt.

Pilotprojektet är långt ifrån fullständigt: uppgifterna om verken är inte alltid kompletta, bara ibland är titlarna Arosenius egna, och många verk har vi inte kunnat samla in – men genom omistlig hjälp av Arosenius barnbarn Astrid Torstensson och andra släktingar har vi kunnat fotografera en mängd målningar i privat ägo. Förhoppningen är att vi skall finna medel för att stadigt utveckla webbplatsen med material och funktioner.

- Forskningsdelarna bestod huvudsakligen i *Rekonstruktion av författarhemmet*, där Westin och Claésson utforskade möjligheterna att rekonstruera Arosenius hem i Älvängen och därmed tydliggöra både hur konstnären själv arrangerade sina verk i hemmet och hur hemmet och omgivningarna tog sig ut i jämförelse med den konstnärliga gestaltning som många av hans målningar iscensätter. Genom arbetet återskapades och inplacerades också i digital form vissa konstverk på väggar, tak och möbler i det för årtionden sedan utdömda och rivna konstnärshemmet. För detta arbete har en applikation, användbar bland annat i mobiltelefoner, utvecklats. Detta delprojekt har fått ytterligare medel och kommer att resultera i en eller två böcker.

*Digitaliseringens processer*: Westin har utrett hur produktionslinjen från fotografering, anrikning av metadata och distribution påverkar verken själva och förståelsen av dem.

*Analys av utställningar*: Westin och konstvetaren Alexandra Herlitz undersökte hur konstnären iscensattes efter sin död i två utställningar: Rom 1911 och Helsingfors 1926. I denna studie ingår också en digital rekonstruktion av utställningsmiljöer baserad på de konstverk som stått till projektets förfogande.

*Användartillvändhet och andra perspektiv på en digital webbplats*: konstvetaren Karin Wagner och interaktionsdesignforskaren Sara Ljungblad utredde hur en webbplats kan utformas så inkluderande som möjligt, och andra sätt varigenom kulturarvsmaterial kan förmedlas till allmänheten.

*Bilden av Arosenius*: undertecknad studerade vilka bilder av konstnären som vuxit fram i artiklar, utställningskataloger och böcker (dock inte recensioner och tidningsartiklar). Studien inbegrep också Arosenius egna bemödanden att framställa sig själv och etablera sina konstnärroller.

### **Avvikelser från projektplanen**

Vissa kostnader sköts till 2019, det sista året medlen var disponibla.

Jonathan Westin gick ned i tid medan Alexandra Herlitz tog över en del av hans medel.

Sverker Lundin ersattes av Cecilia Lindhé som koordinator.

Det redaktionella arbete som Ilaria Tedde avsågs göra gjordes i stället av två andra, Joanna Persman och Anders Svensson.

Antalet bilder som förts in i databasen begränsades inte till verk och dokument från Göteborgs universitetsbibliotek, Nationalmuseum och Göteborgs Konstmuseum: ett stort antal föremål i privat ägo kunde också införlivas i samlingen.

Den avslutande konferens som planerades ersattes av ett antal mindre konferenser och seminarier, flera arrangerade i samarbete med Centre for Critical Heritage Studies, ett samarbete mellan Göteborgs universitet och University College London. Exempelvis hölls symposiet Critical Heritage Studies: Current Discourses and Global Challenges den 7-8 november på Världskulturmuseet i Göteborg. I utställningen Humanistic Fabrications presenterades digitala representationer av kulturarv, bland annat Aroseniusarkivet. En film visades där upp som undersökte narrativ och affekt som en ingång till arkivet genom ett kollage av bilder och filmer från Ivar Arosenius hem och rekonstruktionen därav. Dagarna bjöd också på presentationer och paneldiskussioner med forskare från Sverige, Tyskland och England där Jonathan Westin från Aroseniusprojektet medverkade.

Därtill etablerades samarbete med Riksantikvarieämbetet och den stora museernas grupp för digitala frågor, där Aroseniusprojektet blev utgångspunkten för diskussioner om framtidens ”generösa gränssnitt” och möjligheterna att tillgängliggöra enskilda konstnärskap ur större samlingar. Bedömningen har varit att spridningen och utbytet av perspektiv och idéer blev effektivare på detta sätt.

Den avslutande antologi som planerades blev inte av. I stället blev antalet artiklar och presentationer större än planerat och i ett fortsättningsprojekt som drivs av Jonathan Westin och Dick Claésson, finansierat av Anna Ahrenbergs stiftelse, kommer en bok att publiceras. Undertecknad har för ambition att framställa en bok med Arosenius litterära utkast och en undersökning av det narrativa elementet i hans bildkonst.

## **Reflektion**

Före förteckningen över publikationer, presentationer och andra resultat vill jag gärna säga att projektet har varit högst inspirerande att leda, fyllt av fascinerande upptäckter och insikter. Sammansättningen av personligheter och perspektiv har varit mycket produktiv: från en rad olika institutioner inom och utom universitetet, från forskare inom flera olika discipliner och från tekniska utvecklare, såväl bland medarbetarna som i styrgruppen och projektets internationella rådgivande kommitté. Projektet beviljades ungefär samtidigt med att vi startade Centrum för digitala humaniora vid Göteborgs universitet och har å ena sidan haft stor nytta av centrumet – å andra sidan har centrumets mycket positiva utveckling främjats av projektet. Jag ber att få tacka Kungl. Vitterhetsakademien och Riksbankens Jubileumsfond för förtroendet och medlen.

*Nats Nalen*

### **Publikationer (ett antal ännu inte tryckta/placerade)**

- Claésson, Dick & Westin, Jonathan, "Minnets död, arkivets motstånd. Ivar Arosenius 1909–2016." *Ord & Bild* 1, 2018.
- Herlitz, Alexandra & Westin, Jonathan, "Assembling Arosenius – staging a digital archive", *Museum Management & Curatorship*, Volume 33, 2018, Issue 5, <https://www.tandfonline.com/doi/full/10.1080/09647775.2018.1496847>.
- Herlitz, Alexandra & Westin, Jonathan, "Under a sky much less tyrannized by the sun: translating Sweden through art at the *Esposizione Internazionale di Roma 1911*".
- Ljungblad, Sara, Karin Wagner, Mafalda Samuelsson Gamboa, "Accessible art at the central station: Students creating inclusive interaction design concepts" (in progress).
- Malm, Mats, "Att frammana konstnären ur arkiven: exemplet Ivar Arosenius", under tryckning i *Kungl. Vitterhets Historie och Antikvitets Akademien Årsbok 2020*, Stockholm 2020.
- Malm, Mats, "Construing Cultural Heritage: The Stagings of an Artist. The Case of Ivar Arosenius", under bedömning för separat publicering i *Cambridge Elements*, Cambridge UP.
- Wagner, Karin, "Random display and recommendations – exploring the web platform of the artist Ivar Arosenius and other digital collections of art", under tryckning i *Museum & Society*.
- Westin, Jonathan & Claésson, Dick, "The Painter Is Absent: Ivar Arosenius and the Site-Specific Archaeo-Archival Reconstruction of the Ghost of a Home", *Bebyggelsehistorisk tidskrift* 73, 2017.
- Westin, Jonathan, "Aroseniusarkivet – ett generöst gränssnitt till ett konstnärsskap", K-Blogg, Riksantikvarieämbetet, 2019-05-23 <http://www.k-blogg.se/2019/05/23/aroseniusarkivet-ett-generost-gransnitt-till-ett-konstnarsskap/>
- Westin, Jonathan "Arosenius Metamorphozed".
- Westin, Jonathan & Herlitz, Alexandra "Retrospective presence – staging historical exhibitions through archives".

### **Konferensbidrag**

- Claésson, Dick & Westin, Jonathan "Att frammana konstnären ur arkivet", Det gränslösa museet, Södertälje (2017-04-27).
- Lindhé, Cecilia & Westin, Jonathan, "Conjuring up the Artist from the Archive", *Critical Heritage Studies at the Museum of World Culture* (2015-10-15).
- Herlitz, Alexandra & Westin, Jonathan, "Das Archiv in der App – Kontextualisierung, Aktivierung und Diversifikation mithilfe von digitalisierten Archivalien in Kunstausstellungen", *Museum and the Internet: MAI-Tagung*, 14 -15 maj 2018, Potsdam, [https://mai-tagung.lvr.de//media/mai\\_tagung/pdf/2018/MAI-2018-Herlitz-Westin.pdf](https://mai-tagung.lvr.de//media/mai_tagung/pdf/2018/MAI-2018-Herlitz-Westin.pdf).
- Herlitz, Alexandra & Westin, Jonathan, "Staging Arosenius abroad – the use of digital scenographies for studies in critical historiography", *NORDIK XII*, 25–27 oktober 2019, Köpenhamn.
- Malm, Mats, Lindhé, Cecilia & Westin, Jonathan, "Conjuring up the Artist from the Archive", *Archive, Art and Activism at University College of London* (2015-09-04).
- Lindhé, Cecilia, "Humaniora, digitalisering och kulturarvets olika gränssnitt", *Kulturarvet som ett och nollor*, Kungliga Biblioteket, Stockholm (2016-09-12).

- Westin, Jonathan, Claésson, Dick, Lindhé, Cecilia and Malm, Mats, "Conjuring up the Artist from the Archives: Ivar Arosenius", Digital Humanities 2016, Kraków 11–16 July 2016 (poster).
- Westin, Jonathan, "The Arosenius Project", Digital Humanities in the Nordic Countries i Oslo (2016-03-16).
- Lindhé, Cecilia, "Digital Humanities at the University of Gothenburg", Digital Approaches to Scandinavian Literature, UCLA, 2017-11-23).
- Westin, Jonathan, "The Interfaces of the Arosenius Archive, Future of the Past, Svenska Institutet i Aten (2018-02-14).
- Westin, Jonathan "Digitala metoder i Aroseniusarkivet", Riksantikvarieämbetets färgforum, Malmö (2018-04-20).
- Westin, Jonathan, "Aroseniusarkivets gränssnitt", Digikult. Göteborg (2018-04-26).
- Lindhé, Cecilia, "Digital humaniora vid Göteborgs universitet", Uppsala universitet (2018-05-14).
- Lindhé, Cecilia, "Arkivet – mellan praktik och estetik", Workshop om transkulturalitet, Göteborgs universitet, Jonsereds Herrgård (2019-08-29).
- Westin, Jonathan & Lindhé, Cecilia, "Humanistic Fabrications and Simulations" The Humanities Lab, University of Sussex (2019-12-03).

### **Populärvetenskapliga föredrag/presentationer**

- Claésson, Dick & Malm, Mats, "Aroseniusprojektet", forskartorget på bokmässan i Göteborg (2017-09-30).
- Claésson, Dick & Westin, Jonathan, "Det närsynta landskapet", universitetsbiblioteket i Göteborg (2016-03-08)
- Claésson, Dick & Westin, Jonathan, "Det närsynta landskapet", biblioteket i Älvängen (2016-09-21).
- Claésson, Dick & Westin, Jonathan, "Ivar Arosenius i Älvängen", Rotary, Lyckholms disponentvillan (2017-10-27).
- Claésson, Dick & Westin, Jonathan, "Arosenius i Älvängen", konstföreningen i Ale på Lödöse museum (2017-11-12).
- Claésson, Dick & Westin, Jonathan "Arosenius i Älvängen", Näckrostimmen på Göteborgs universitetsbibliotek (2018-12-04).
- Herlitz, Alexandra & Westin, Jonathan, "Rom 1911. Med Ivor, Solm, Carl och andra svenskar på världsutställningen i Valle Giulia", Romvänner västsvenska avdelningen, februari 2019, Göteborg.
- Herlitz, Alexandra, "Arosenius abroad – Ivar Arosenius konst på internationella arenor", Institutionen för kulturvetenskapers forskardag, Göteborgs universitet, 6 februari 2019.
- Westin, Jonathan, "Att rekonstruera Arosenius hem från arkivet", universitetsbiblioteket och Digiti i Göteborg (2015-11-04).
- Westin, Jonathan, "Ivar Arosenius", GSU (2016-10-17).
- Westin, Jonathan & Claésson Dick, "Arosenius hem i Älvängen", Litterär vårsalong på Göteborgs stadsbibliotek (2017-05-14).

Westin, Jonathan, "Reconstructing a home", *Virtual Dioramas as Spaces of Inquiry*, Humlab i Umeå (2017-09-12)

Westin, Jonathan, "Ivar Arosenius", Hjälmareds folkhögskola (2018-05-07/08).

Westin, Jonathan, "Aroseniusprojektet", Senioruniversitetet i Alingsås (2018-10-16).

Westin, Jonathan, "Ivar Arosenius", Alingsås konförening (2019-02-02).

### **Examensarbete**

Hallberg Jönsson, David, "Accessible Artist Archives: Supporting web professionals in creating accessible navigation for online artist archives", Master of Science Thesis in Interaction Design & Technologies (2019).

### **Appar**

Westin, J. & Claésson, D. (2018) Dockhemmet v. [iOS App Store](#)

Westin, J. & Claésson, D. (2018) Lillans Resor v. [iOS App Store](#)

### **Webbplats**

aroseniusarkivet.se

Jonathan Westin

# Introduction

The Arosenius Archive collects digitised works of art, photographs and documents that pertains to the Swedish artist Ivar Arosenius. The archive includes all documents from the University Library of Gothenburg's Arosenius archive until 1970, as well as all works of art and documents owned by the Gothenburg Art Museum, the National Museum and Norrköping Museum. In addition to these collections, a large number of works of art and letters in private ownership have been digitised and incorporated into the archive. The archive today includes more than 4900 digitised works of art, documents and photographs.

During the project, which started in 2016, a long series of decisions were made regarding database structure, meta data handling, and interfaces. The first section of this document serves to describe the various parts of the project. This is followed by a second section which attempts to evaluate these decisions, and offer recommendations for future projects with similar challenges.

## Section 1: description

### Technological framework and metadata

Our project partners (Gothenburg University Library, Gothenburg Art Museum and the National Museum) completed the digitised material of documents or artworks that were in their care and uploaded this material into their databases. Once complete they provided the Arosenius Project with a copy of the full resolution images and a structured document with metadata. The images and metadata were imported into the Arosenius Project's Elasticsearch based database structure and refined to become more uniform when it comes to ontologies used. The database is queried through a backend node.js app providing an API, and the result is presented through a frontend for the user. While an Elasticsearch database allowed for fast search and some advanced ways of sorting the results, the goals of making the APIs immediately available for other projects proved difficult as it takes considerable time to rewrite the backend to communicate with the more widely adopted SQL ba-

sed databases. To honour the commitment of making the code a resource for a wide audience, we therefore had to invest time and resources at the end of the project to rewrite large parts of the backend and some functions.

In addition to the metadata provided from our partners, the project has also generated new metadata for the large number of works that have been digitised within the project from private collectors and from print material (approximately 932 artworks). This metadata was registered by three different persons (two external consults with art historical expertise, and one project member). The metadata is structured to be easily exported to LIDO (Lightweight Information Describing Objects), and the standard naming conventions have therefore been used whenever possible. The metadata can be divided into three groups:

- 1) data describing the physical document and its context (examples of which are the document's category and sub-category, title, date, technology, and which collection it belongs to);
- 2) data describing the subject / content (this includes the names of people, things and places mentioned or depicted, and is therefore potentially extremely comprehensive if complete);
- 3) data automatically generated from the file describing its primary colour tones, its proportions and patterns.

Basic metadata records:

- Title
- Subtitle
- Description
- Type/Category (i.e. works of art, letter, photography, document, print, manuscript, sketch book, and artefact)
- Genre/Subcategory (i.e. painting, drawing, newspaper clip...)
- Persons (i.e. persons mentioned or depicted in the document...)
- Tags (i.e. intoxication, exhibition, animal...)
- Places (depicted or mentioned)
- item\_date\_string/Machine readable (i.e. 1906)



- item\_date\_str/Date (what is displayed in the user interface which could be more vague than the machine readable date, for instance "circa 1906", or "The 1920s")
- Creator (i.e Ivar Arosenius)
- Collection (Gothenburg Art Museum, private collection etc.)
- Museum internal id (the inventory number used by the museum partners).
- Technique and material (i.e oil, watercolor etc. on canvas, paper, cardboard etc.)
- Measurements
  - Inner height
  - Inner width
  - Outer height (dimensions where frame is included)
  - Outer width (dimensions where frame is included)

Advanced artwork metadata records:

- Acquisition (when the work was acquired into a collection)
- Reproductions (reproduced in print: author, title, year and page).
- Literature (where it has been referenced)
- Exhibitions (name of the city followed by the year)
- MuseumLink
- Signature
- Inscription
- Color
- googleVisionColors
- Published
- Deleted (if the object is marked as deleted)
- Images

Metadata records for correspondence

- Sender (name with birth and death year)
- Recipient (name with birth and death year)
- Content (a transcript of the content)

Metadata records for the position of the document in relation to a series:

- Bundle name
- Bundle order
- Page Type
- Page Number
- Order

At a minimum, each object needs to have data in the fields Category, Subcategory, Collection, and Title. This allows for the object to be part of searches for, as an example, all artworks or manuscripts, all letters, photographs or sketches, all objects from a certain museum or archive. However, though a title is required, most objects are registered as "Utän titel" (No title).

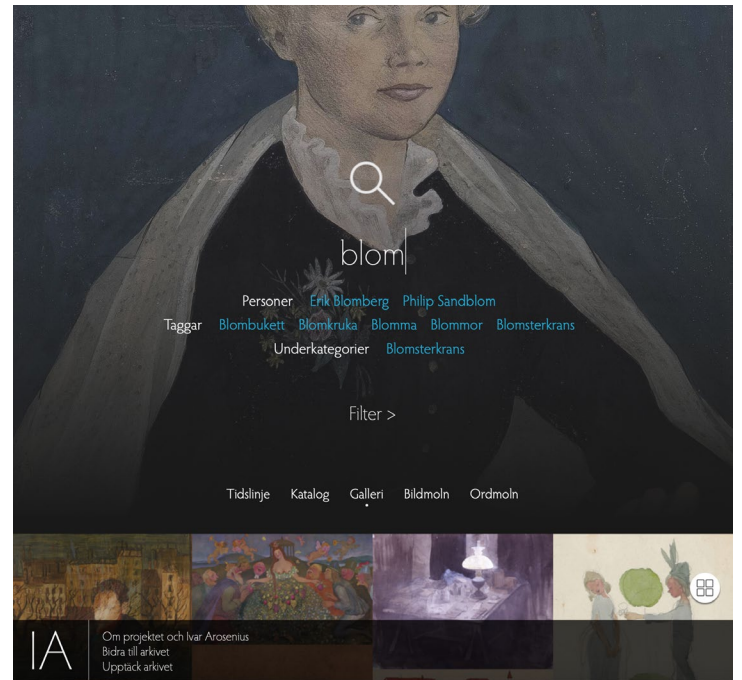
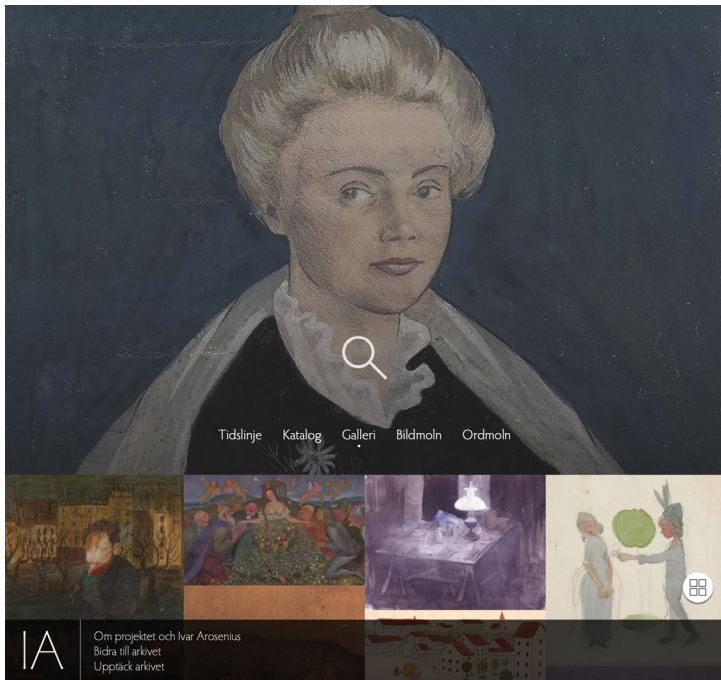
## Interfaces

One of the goals with the Arosenius project was to explore how a digitised collection could be presented in an accessible way that not only brings meaning to the subject and illuminates qualities in the material, but that also either lends itself to analysis or were the result of analysis.

One way of describing a generous interface is that it communicates data visually, rather than relying on words or analysis. Therefore, since the interface itself offers an interpretation of the data, it must be designed to be relevant to the material to be communicated. When talking about generous interfaces, it is almost exclusively about communicating quantitative data, presenting a large number of objects in a way that almost abstracts the individual object. This reflects the development in the digital humanities where, through digitalisation, we now have the opportunity to see new patterns in authorship, or follow the development of concepts over time. But one can also be generous in other ways.

During the course of the project, we designed four distinct interfaces in which we explored different ways of communicating both quantitative and qualitative data that allowed a user to approach different aspects of the material in the Arosenius archive.

In all cases, we tried to either avoid or overcome the limitations that a physical archive brings and which are sometimes unconsciously transferred to its digital counterpart, and partly to mitigate the effect of what was lost in the digitisation process where a physical document full of depth and history has been translated into a high resolution image.

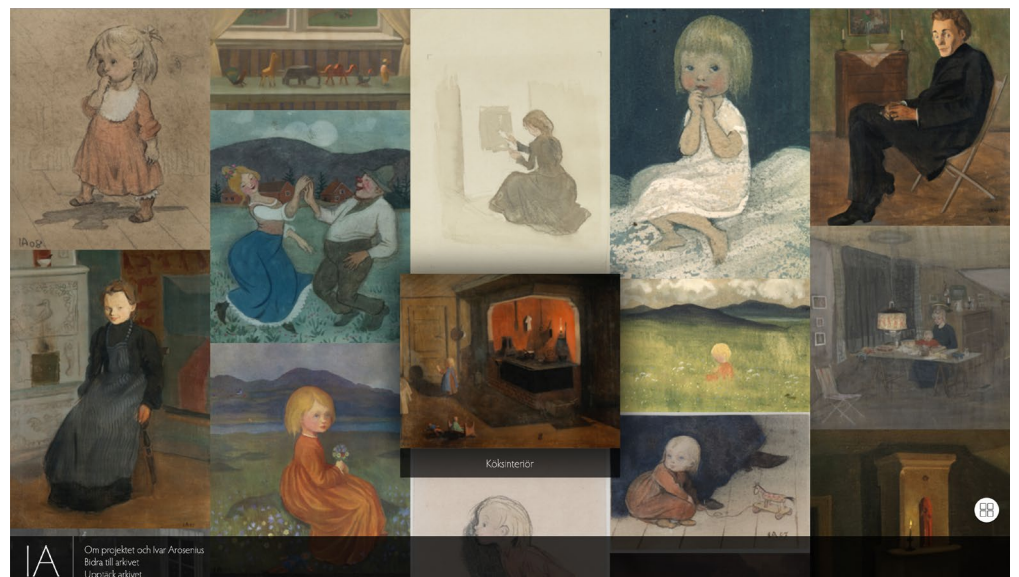


## Interface 1: Aroseniusarkivet.se

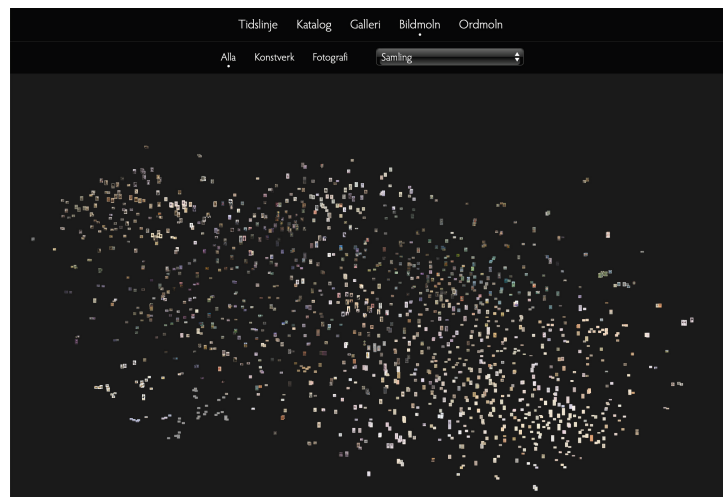
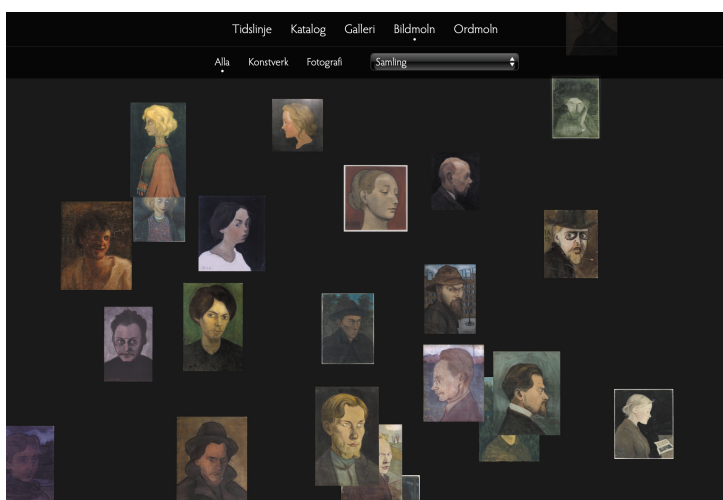
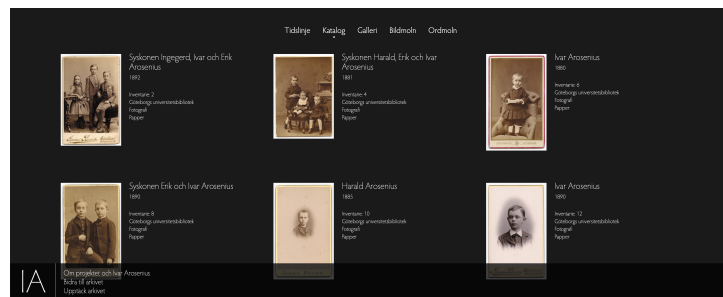
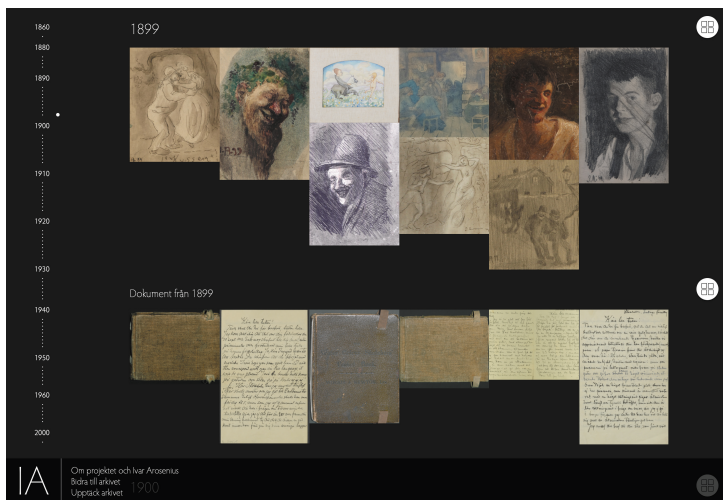
For the website, we worked with two lead words with no mutual ranking: explore and search. The archive material should be as easily accessible as possible for all users who wish to explore the art, but allow more advanced opportunities for those who are looking for specific objects. The user interface is therefore designed to allow these two different goals to exist side by side.

In order to encourage exploration of the material, all digitised works of art and documents are available directly on the Arosenius archive's homepage, without the user having to enter any keyword or navigate any page hierarchies. The search field often constitutes a door guard that can be difficult to get past. The hierarchy and language of a digital archive can also be an obstacle where basic knowledge of the subject is sometimes required to navigate to a collection. Making the material available directly is not just to help the uninitiated: in a digital archive, the search field and page hierarchy constitute a black box where the user is expected to trust that the metadata is correctly recorded and the material is sorted according to principles that match the user's expectations.

By making all the material available immediately, we let the user directly into the archive room and open all the boxes. No material is hidden and we have deliberately used as little text as possible. The archive is at the centre, not the interface. By scrolling down, all the artworks are first loaded, then all the photographs and finally the other documents. We call this basic mode for Gallery and the order of the artworks is randomised so that the returning user can always discover something new. The layout and resolution are adjusted to the screen size and fill up all available space for the user's view to be completely filled with the archive material. On a large 5k screen, individual documents, five in width, are sharp enough to be read directly in the gallery view. In addition to Gallery, the home page has four other modes that sort





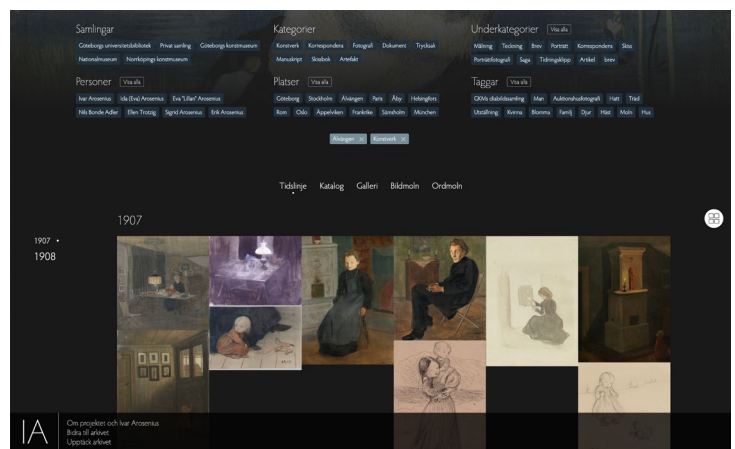
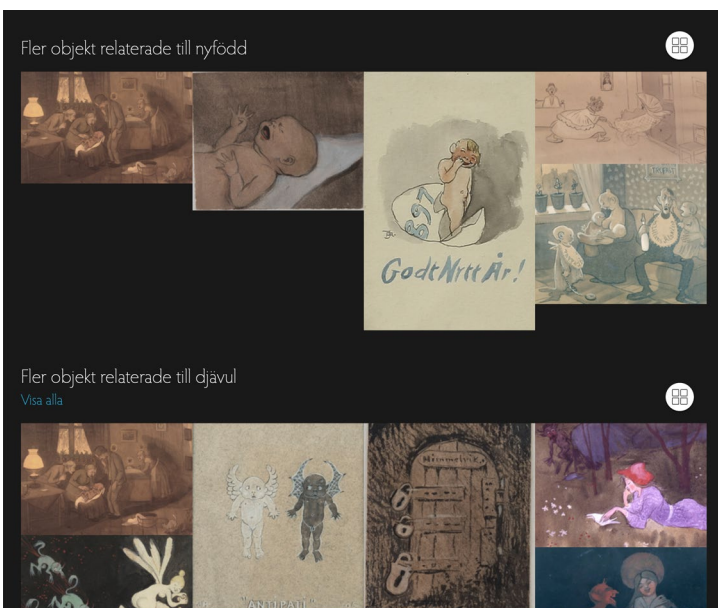
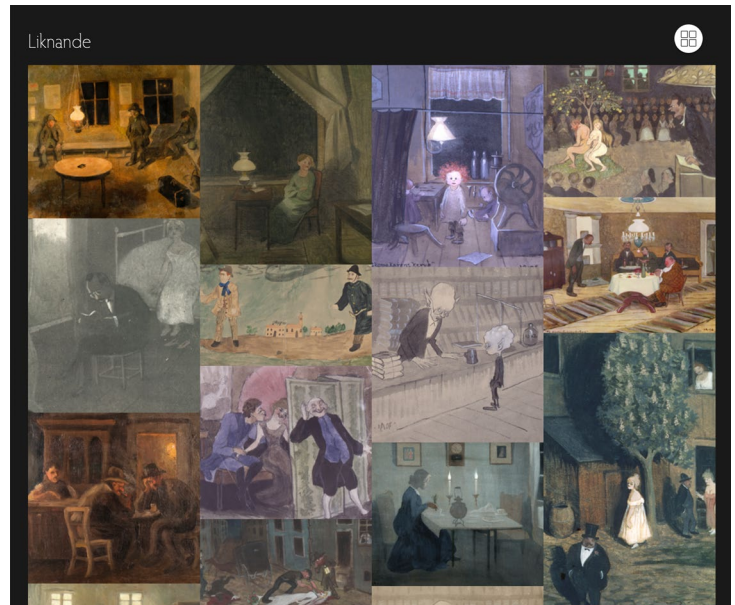
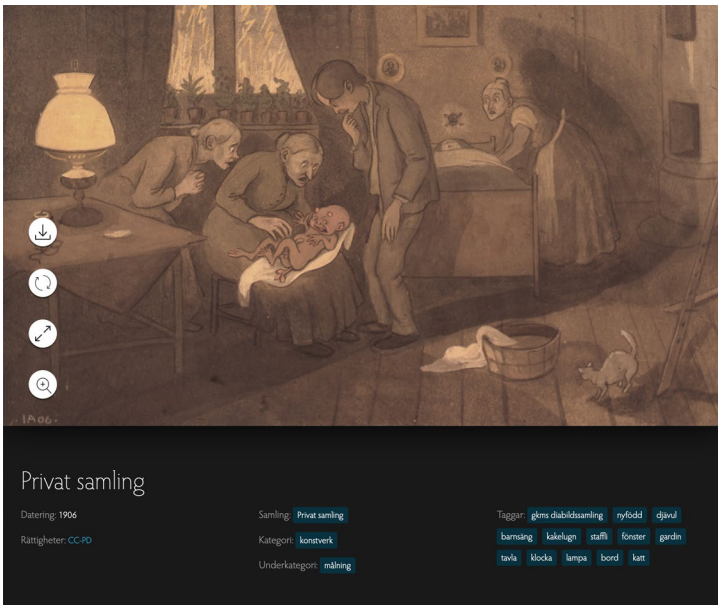


the material in different ways; Timeline, Catalogue, Image Cloud and Word Cloud.

The Timeline sorts all material chronologically from the earliest document of 1886, a photograph of Karin Arosenius, to the last document of 2004, a memorial to Ivar Arosenius's daughter Eva "Lillan" Arosenius. In the timeline, the typographical size of the year reveals how much material is available from that year. The Catalogue, which is the most conservative mode, sorts all material by the Arosenius archive's internal inventory number and is a view for those who systematically want to access the archive material. In addition to a visual representation of the archive record, its title, year, collection it belongs to, category of object, and material or technology is displayed. The Image Cloud uses machine learning to sort all works of art and photographs using their visual relations to other works in the archive. Lines, patterns, lights and colours are used here to give a new input to the material. The result is a landscape of images that the user can navigate in three dimensions. The Word Cloud provides an overview of the most common metadata, where tags that appear more often get a more prominent position. In this way, the Word Cloud can be used to quickly get an entrance to the most important strings in the archive.

Each word is clickable and results in a visual gallery of the related material.

In order to encourage further exploration, each object leads to new suggestions and therefore does not constitute an end point but a beginning. When the user clicks on an object, the artwork or document fills the entire screen to create a closeness to it, but below the object, mini galleries are automatically generated based on the metadata or the object's appearance. The function of the mini galleries is to constantly showcase something new that entices the user to click on new artwork or documents. Each gallery has a button in the right corner through which the relative size of the works can be activated (insofar as there is information recorded about the size of the works). This is to counteract the normalisation of the size a digitisation leads to and give an insight into how Arosenius worked on different scales for different motives.



In addition to the ability to sort the material in different ways, there are three different ways to filter the content of the archive; 1) a traditional search box that provides suggestions for words that appear in the metadata but also allows for free text search, 2) a visual way of exploring prominent persons and combining them in different ways (eg all works with both Ivar and Lillan), 3) an array of all registered tags organised by how common they are.

These filters work with the Timeline, the Gallery and the Catalogue so that the visitor, as an example, can get a timeline of all documents related to exhibitions, a gallery with only artworks of Eva and Lillan, or a catalogue with photographs from Älvängen. But above all, these filters enable other interfaces.

## Interface 2: Lillans resor

The Arosenius archive contains the original script for Lillan's *Kattresan* and *Månresan*, as well as alternative versions of several of the motifs. In order to create a tactile closeness to this material, we within the project have released a new digital version of *Kattresan* and *Månresan*, with restored pictures from the original paintings, adapted for touch screens. Paulina Helgeson at the Literature Bank has recorded the texts in the two works. The interface allows the user to switch between the original script, the 1909 edition, and the restored version of the script. A fourth layer will be added; Arosenius's more elaborate paintings where several of the classic motifs have a completely different expression.

Lillan, however, was a real person, Ivar Arosenius's daughter, and the app serves as an entrance to the website's user interface and the rich archive material that pertains to her. Thanks to the website's interfa-





ce and search function, we can link directly from the app to a gallery of artworks and documents, from the first drawing made by her as a newborn to her granddaughter Per Wik's obituary about her. The archive is thus used to give life and relevance to the drawings in *Månresan* and *Kattresan*.

### Interface 3: Dockhemmet

The third interface we designed focuses on contextualisation of the archive material. In 1907 Ivar Arosenius moved to a cottage in Älvängen with his wife and newborn daughter. The two years he lived there until his death in 1909 were productive and many of his most popular works of art are created during this time, including *Kattresan*. Artworks, photographs and documents in the archive describe this place in different ways for six decades, and the challenge with the interface was to bring these fragments from different times together into a reconstruction of the place. What in the web interface is only summarised with "Älvängen" as location information is arranged here via a touch screen-adapted interface spatially at a micro level where the angles of photographs and artworks are staged and compiled. The home is at the centre and the archive material is arranged in relation to this. The physical archive was a context for the photographs and documents lost when they were digitised, and here they are given a new context by being brought back together, virtually, in the place they originated from.

Like Lillan's travels, this is also an entrance to the website's search generated galleries. As the web interface is coded to be responsive and therefore adapts to various screen sizes, the galleries pertaining to Älvängen look at home on a mobile screen.



### Interface 4: Virtual Reality

In the fourth interface, we explore movement, context and scale in relation to the understanding of a digital material. We reconstruct two historical exhibitions, the one in the artist's home in Älvängen and the exhibition in Helsinki in 1928. In a traditional interface, scale and movement disappear, but through VR and reconstruction of environments we can reintroduce the digital material in a spatial context.

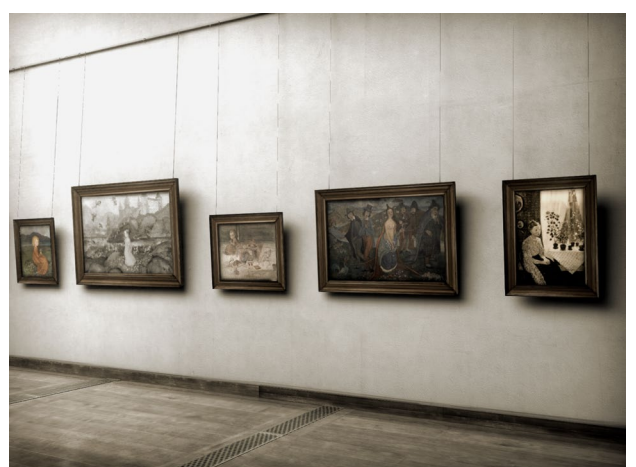
In addition to these environments being more faithful than the web interface in representing the works as physical objects, and with many of the constraints that a physical environment entails (glare from lamps, poor light, reflections in protective glass), they also constitute an analysis where each object is argued for and put in relation to other objects within and outside the archive. Relationships between objects are therefore at the centre here; not only the relationship between two works of art hanging next to each other that together create a different meaning than if they were alone, but also the relationship between the artwork and the room it hangs in, *where* in the room it hangs and how everyday furniture and light allows us to approach it.



# Dockhemmet



# Virtual Reality



## Section 2: Considerations

The work developing the archive was always meant to be explorative and provide a case for testing new approaches to constructing and activating archives, but also to find a best practice for future projects and serve as an example. There are however several things we would do differently if we started up the project today, both due to experiences drawn from the project, and in response to emerging standards.

1. The fact that we worked with such a small material meant we were not forced to solve all problems on a fundamental level but could instead do ad-hoc solutions. This led to a big drawback regarding how the names of persons were treated. As an example, two prominent persons in the archive material are the artist's wife and child. Depending on when different documents are from, the wife's name changes: Ida Adler as unmarried, Ida Arosenius and Eva Arosenius as married, and Eva Arosenius-Dich in her marriage to Anton Dich. Their daughter Eva also has many names: Lillan, Eva Arosenius and Eva Constantine in her marriage to Harouth Constantine. As our model did not support several different names for the same person (or for that matter several different categories for one object), we settled on a single name instead.

To distinguish search queries for wife and daughter (both of whom are called Eva Arosenius), we have chosen to call the elder Ida "Eva" Arosenius and the younger Eva "Lillan" Arosenius. Through this simplification we lost information that carried important information about the persons family context at a certain time. Furthermore, it accentuated both Evas' relations to Ivar Arosenius at the expense of their own identities and history, and made it harder for the user to know what name to use when searching the archive. A more robust way of accounting for this on a database level, perhaps by establishing or linking to authoritative data, is not only advisable but should be a requirement going forward.

2. When the project started, our museum and archive partners were not set up with APIs that would have allowed us to aggregate data from them. Instead they delivered images and metadata that we entered into our system. The advantage was that we were free to adapt the data to suit the different functions we wanted to support as well as crop images (for instance removing copyright information or frames for clean versions of the artworks). Furthermore, having access to all images on our own servers allowed us to experiment with nearest neighbour machine learning and automatic metadata generation using google vision.

The drawback is that this has essentially forked the material into two silos that neither communicate with each other, nor benefit from new work being done. Ideally, the Arosenius project could have worked as an aggregator combining resources from the partners, but letting the partners be responsible for the digital original. If the infrastructure had been available, by making use of Linked Open Data as a model the project could have explored how to make use of available open datasets to curate and present a decentralised material, and thus be a model more readily adaptable to other collections. This could have emphasised the value of the digital original, and resources we put into refining our metadata could have been placed with the partners instead. A possible outcome could have been the Arosenius archive as a central link between the different partners through which they could enhance their own digital collections. Now all of our partners have systems in place for publishing their collections in a way that would allow us to do this, and this is something we will explore in future projects.

3. One of the interfaces that drew a lot of attention was the reconstruction of the artist's home through the mobile app Dockhemmet. It gave a sense of presence to many of the documents and artworks in the archive as it situated them in relation to not only a physical environment, but also combined a heterogeneous material consisting of photographs, manuscripts, and paintings into a contextual whole. In contrast, the web interface strived to be as neutral as possible and instead provided the infrastructure for the experiences developed for Virtual Reality or touch screen devices. This division of labour between the interfaces could have been less severe. Though I do not champion the idea that Dockhemmet should have been created through web technology, or be accessible through plugins, the web experience would have gained from also providing a more editorial introduction to aspects of Ivar Arosenius life and art where affect and narration could have been a more natural ingredient.

4. Finally, we were a bit too conservative when it came to metadata, opting for an iconographic-centered approach which treated each image as a catalogue of separate imageries (i.e flower, landscape, man, woman, hat). While this allows a certain type of searches to be carried out, it does the artwork a disservice and does not utilize art historical analysis or even human skills in describing deeper contexts.