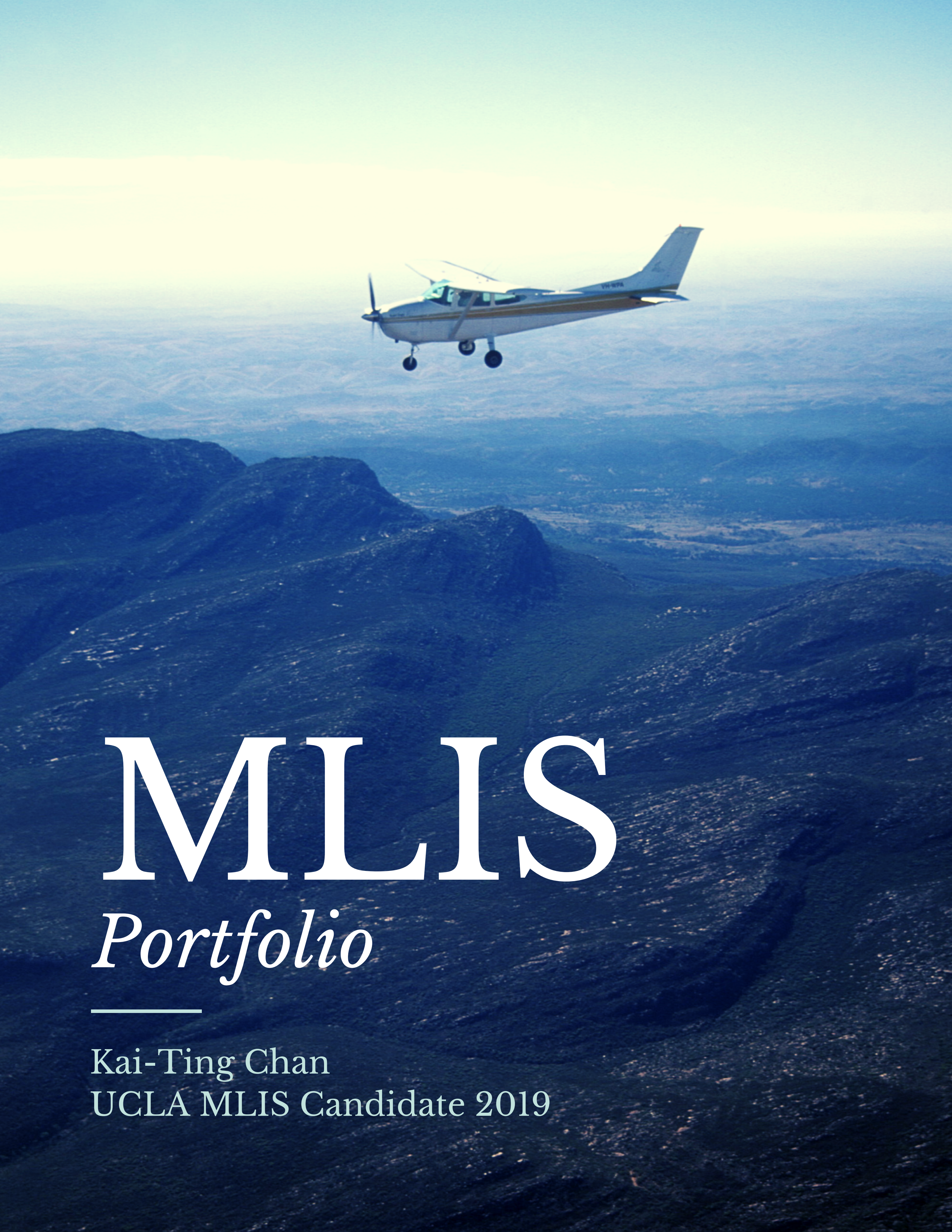

MLIS

Portfolio

Kai-Ting Chan
UCLA MLIS Candidate 2019

ABOUT

Hello and welcome! My name is Kai-Ting Chan, a UCLA Master of Library and Information Science (MLIS) candidate 2019. My area of specialization is informatics, such as user experience design, cataloging, and digital humanities. I am interested in working in museums' information departments, but looking forward to expand into museum conservation, curation, and archaeology, more specific in battlefield archaeology, which aligns with my interest in World War II.

In this portfolio, I showcase my research topic in regard to how to make online museum virtual reality tours more visible to the visitors, as well as present a selection of coursework that I work on in this program.

If you have any questions or concerns, you can contact me at kaimovies12@gmail.com. Thank you and enjoy!

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50-Words Summary

Throughout the past decade, museums have increasingly utilized online virtual reality tours to promote their exhibits and enhance collection discoverability. As this technology is relatively new, strategies for effective implementation are still emergent. Examining VR tours developed by several prominent museums, this issue statement weighs their respective pros and cons and offers recommendations for best practices. (56 words)

Bringing Virtual Reality Museum Tours Closer to the Public

Even though each museum has its own agenda based on its theme and location, there is one crucial element that all museums share: to provide services to the public; as one of the goals in American Alliance of Museums' 2016-2020 strategic plan is Access: "deliver relevant content and superior user experience" (AAM). This includes finding ways to make museums' collections as discoverable and accessible as possible to the general public, rather than only for the scholars and researchers. For generations, museums utilized ways such as publishing collection catalogues and creating digital archives in hopes to reach wider audiences. As technologies become more advanced, museums begin to apply them, and one of the technologies that becomes increasingly popular for the museums to employ is Virtual Reality (VR).

However, while researching various VR implementations in the museums, the author finds it difficult to discover them on museum web pages or nearly impossible to access them after discovering them. Therefore, the paper wants to advocate that VR museum tours should be easy to discover and access like collection catalogues and digital archives: they should not be restricted by time and space, rather enable access to the people who cannot attend the exhibitions. To find ways for better implementations, the paper will first examine how VR museum tours can take references from collection catalogues and digital archives; then the paper will use Tate Modern and British Museum's VR tours' as examples to weigh their pros and cons to find the best practices.

Before VR implementations, museums already have collection catalogues and digital archives to present their collections online. Collection catalogues or museum catalogues are one of the most important parts of the museums. Through detailed research and arrangement, museums make their collections available to the public. Museums put in resources and budgets for collection catalogues because they "belong to a well-established genre with a distinguished pedigree, and they have been widely admired for generations for their attention to detail and high-quality production. They are also one of the most important ways that museums share research findings of the works of art in their collections" (Museum Catalogues in the Digital Age). No matter whether the collection catalogues are physical or digital, it is relatively easy for the visitors to access. The physical collection catalogues can usually be purchased in museum stores and are generally categorized by exhibition or artist. For the online collection catalogues, they are usually found under "The Collection" tab on the museum website homepage. They both contain the same information such as title, the name of the artist, dimension, materials, and background information. Some may also offer additional resources and artworks' display locations. Having that information available and accessible to the public, museums fulfill their mission on being of service to the public. People can easily gain that collection information anytime and anywhere without difficulties.

A step further from the collection catalogues; museums also begin to build digital archives for certain collections that not only note down the artworks, but also categorized and make them more comprehensive by putting in relative information. For example, Hammer Museum in Los Angeles builds a digital archive for its exhibition *Now Dig This!: Art and Black Los Angeles 1960-1980*. Going further than the collection catalogues, the digital archive adds in not only the artworks, but also all aspects of the exhibition, such as detailed artist backgrounds, documentation, and research information. The purpose of the digital archive is to "extends the life of this momentous exhibition, with a gallery of artwork images and the associated didactic label texts from the installation at the Hammer Museum; essays, artist biographies, and a chronology from the *Now Dig This!* exhibition catalogue; and a variety of other resources meant to encourage further research" (Now Dig This!). People who are interested in the digital archive can easily find more information on the museums' websites. Just like collection catalogues, there are no time or distance limitations.

No matter whether they are collection catalogues or digital archives, both are easy to discover and access. They are parts of museums' missions in regard to engagement, and by far, they are successful. VR museum tours follow their footsteps trying to make the visitors' experiences more vivid. However, currently, it lacks basic discoverability and accessibility. Draw from AAM's goal for Access, the paper defines discoverability and accessibility in this context as: discoverability refers to how visible online VR tours are for the visitors who try to explore them on museum websites; accessibility refers to after visitors discover the VR tours, how convenient and effortless will it be for people to access them online. By far, VR museum tours still have a long way to go in terms of these two basic principles that are pivotal to the museum missions.

The idea of "Virtual Museum" arrives first in 1947 by French novelist and art theorist André Malraux, he articulates the concept of imaginary museum *(le musée imaginaire)* " a museum without walls, location or spatial boundaries, like a virtual museum, with its content and information surrounding the objects, might be made accessible across the planet" (Styliani, 521). The term "Virtual Reality" is then popularized by Jaron Lanier in 1989 (Rubin), who focuses mainly on the technological aspect of VR, such as newly invented special headsets that allow the users to experience imagined situations. After that, a lot of different fields begin to implement VR. In museum fields, there are two main reasons why they utilize VR. For cultural heritage professions, VR is used to recreate part of the cultural heritages that are lost or destroyed as a mean of preservation (McBride, 41-42). Yet my focus will be looking at the VR museum tours that aim to better engage with their visitors. As Sarah Tutton, a senior curator at the ACMI, puts: "...the hope is that VR will become an equal tool in our holistic story-telling and educational toolbox alongside our objects or labels or kiosks, etc, all telling that one story or even enabling entirely new ways of storytelling using those unique traits that VR brings to the table that we can't do with any other forms at this point in time" (How Can Museums Use Virtual Reality?).

VR museum tour is a new way for museums to present their collections to the public that increases interactions, as Maria Roussou, a scholar in Interactive Systems, believes: "Interactivity is a raison d'être of a virtual reality world" (Roussou, 182). Her thought echoes with Hannah Boulton, the head of press and marketing at the British Museum. She also believes that VR is not a one-way street: "For us, it's about audience engagement, we don't want to do it for VR's sake. What we want to do is to use VR where it can lend that extra context" (Cigainero).

In the following, the paper will examine discoverability and accessibility of three VR museum tour case studies, one from Tate Modern and two from The British Museum respectively. The paper will be looking at the problems surrounding them, include time and location constraint as well as limitations of budget. From there, it will then propose two potential solutions and anticipate their drawbacks.

Located in London, Tate Modern put on a Modigliani exhibit in 2017. As part of the exhibition, the museum creates a VR tour that allows the visitors to take a tour inside Modigliani's final studio in Paris as a way to familiarize more with the artist's life and creative inspirations during that period. Tate Modern dedicates a whole web page for its VR tour, including the background of Modigliani's artworks and the VR creation background. The layout of the website is organized, which is a comprehensive way for the visitors to learn more about the ideas behind the creation of this VR tour and their goals, yet, the fundamental ideas of discoverability and accessibility are missing.

Unlike collection catalogues, which the visitors can easily access through "The Collection" tab on the museum homepage, the VR tour does not exist anywhere on the homepage, unless the visitors specifically type in "virtual reality". This creates a huge obstacle for the visitors if they do not know Tate Modern develops a VR tour. Secondly, even if the visitors successfully navigate to the VR tour page through keyword search, they can no longer access it because the tour is only available from November 23, 2017 to April 2, 2018. This creates difficulties for the visitors, including time and location constraints. Even if the visitors do visit the museum at that time period, they are being served on a first-come, first-served basis, with an average of 25 minutes waiting time. Moreover, unlike collection catalogues and digital archives that try to promote lasting showcase that allows the visitors to revisit the collections as long and as many times as they need, Tate Modern's Modigliani VR tour only has the evidence of existence, not the actual tour. People can no longer access it after the time has passed. From this example, the author realizes that even though the museum provides a detailed overview and background on its

VR tour, it does not fulfill the basic discoverability and accessibility requirements, thus does not fulfill its public service mission (Modigliani VR: The Ochre Atelier – Behind The Scenes).

Although slightly improved on certain aspects, the British Museum also has problems with discoverability and accessibility in its VR tours. Unlike Tate Modern, the British Museum has been putting on VR tours more than once. In 2015, the museum sets up a VR weekend specifically for the children and families in partnership with Samsung. The theme of the VR tour is to recreate the Bronze Age to allow the visitors to see the collections situating in the original context. The discoverability part of the VR tour design is worse than Tate Modern's, since there is only one piece of plain text information about the tour, and if the visitors want to learn more, they have to contact the office. There are no further background information and the visitors cannot even see what the exhibit looks like. Similar to Tate Modern, there is no way for the visitors to discover this VR tour organically on the museum homepage, because there is simply no sign of this VR tour's existence. Therefore, this VR tour fails to achieve both discoverability and accessibility.

The other British Museum VR tour takes a slightly different turn. In 2017, the museum launches an Egyptian gallery VR tour that utilizes primary Facebook's News Feed (states that it gives the best result) accompanies a VR headset (recommend Samsung Gear VR headset). With these two components, the visitors are able to immerse themselves in the gallery without time and location restrictions, which is a huge improvement from the previous two examples. However, this creates another accessibility problem, which is the budget. Currently, on the market, a Samsung VR headset costs around 130 dollars, which can be quite a huge expense for a lot of visitors that are interested in VR tours. Even if the visitors can spend money on a headset, is there enough incentives for them to do so with a single VR tour (Explore ancient Egypt in our Virtual Reality tour)?

From these three examples at Tate Modern and the British Museum, it is clear that they still have a long way to go in terms of discoverability and accessibility. Unlike collection catalogues and digital archives, both of the museums do not list VR tours specifically on their homepages, so it is very difficult for the visitors to find them. While the Egyptian VR tour at the British Museum allows the visitors to explore the collection without time and space limitations, a problem regarding budget arises.

Therefore, after weighing their pros and cons, I conclude two points that I would like to advocate for future museum VR tours in regards to discoverability and accessibility. With discoverability, museums' homepages should at least have an option under "The Collection" or "Explore" that is dedicated to VR tours like the collection catalogues and digital archives, in order to make them more visible and allow the visitors to discover them more easily. The museums can also consider conducting surveys and organize the information by user experience design tools, such as personas and usability reports to better understand what serves best for the visitors.

Second, it is an improvement for the British Museum to put its VR tours on the go, so the visitors can enjoy immersive experiences anytime and anywhere. However, the price of the device might deter a lot of potentially interested visitors. Therefore, I would like to advocate for the museums to develop apps that are compatible with affordable VR headsets, such as Google Cardboard.

Some might argue that those two proposals will be a waste of resources and time for the museums, since VR tours are not yet an important part of the museums and they might not last. However, I believe museums will only look forward to develop more engaging ways of storytelling, and VR is an excellent way to immerse the visitors that collection catalogues and digital archives cannot compete with, as art historian and museologist Bernadette Biedermann states: "... the virtual can increase user exposure to the physical object because it allows access to collections that are not physically available for any reason and make users more curious about the original". She further states that this argument is verified by the neuroscientific studies that "Neither can one person undergo an experience of somebody else, nor can one medium replace the experience which another medium produces" (Biedermann, 284-285). Even if VR tours do develop into something slightly different in the future, it is still a useful record and reference for the museums, just like online collection catalogues begin to slowly replace the physical ones, but the physical version still provides a solid base for how the materials can be migrated online.

Another argument might emerge that the reason why museums utilize certain companies' headsets is because the collaboration allows the museums to have more resources into developing larger scale content, such as the British Museum's collaboration with Samsung that allows them to build educational programs that have attracted over 100,000 students and families (Your Support: Success Stories, Samsung). However, that is still limited to school programs, if they extend them to app versions that are compatible with Google Cardboard (a simpler VR headset, which generally cost less than 15 dollars) or other affordable headsets, the effects will be much greater, since it will extend to wider and younger audiences. As a large part of museum fundings come from donors, the more visitors imply more potential donors, which in terms help the museums develop better exhibits. The Metropolitan Museum in New York discovers that after incorporates VR into its exhibit, the average age of visitors drops from 60 to 27 from 2011 to 2014 (Erlick).

For museums' limited budget, it is understandable that museum professions are reluctant to invest more money into developing VR tours that have not yet been concretely proven as successful. However, according to the statistics from AAM, museums in America attract around 850 million visits as well as millions of online visits each year and contribute $50 billion to the US economy per year (AAM). Public's interests in museums are already high, it will definitely be beneficial to develop VR tours to attract more visitors of all ages. For museums that require tickets, VR tours will bring in more revenue; for museums that are free, there will definitely be more donations and attract more public attention through sponsorships and advertisements.

From collection catalogues, digital archives, to VR museum tours, museums are constantly finding ways to improve ways to make their exhibitions more engaging and accessible to the public. Even though VR museum tours are still in their infancy, analyzing examples such as Tate Modern and the British Museum allow us to weigh their pros and cons to find the best practices. The process will likely consume a sufficient amount of museums' energies and resources, yet those developments have lasting benefits for the public as well as the museums themselves. To make VR tours more easy to discover and accessible allow the public to get closer to the collections, which make them curious and appreciate the art more as a whole. This will have a massive impact that encourages people to explore within the art world, which is one of the most important reasons why museums exist.

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Professional Development Statement

I came into this MLIS program with a Bachelor degree in Film and Television, so initially, I aimed to pursue a career in film preservation. At the beginning of my first quarter, I toured various film studios to better understand the industry. I also took recommended classes for students interested in Media Archival Studies, such as Archives, Records, & Memory and Introduction to Media Archiving & Preservation. While I gained more insights in this particular area, I also wanted to explore classes that are more hands-on and focused more on technical aspects. I heard students from previous years recommended classes in informatics, since the classes generally involve working with real-life clients. However, informatics was a foreign term for me, but I decided to give it a try because when I enrolled in one of the core classes, Description & Access, I was amazed by the fact that cataloging was more than feeding data into the machine; it is an important process that allows institutions and scholars to have better access to the resources.

However, the turning point in which I realized what institutions I was interested in working began with the internship fair in April, 2018. I came in with the hope that I would potentially intern in film studios to see how I felt about working in them. I talked to film studios such as HBO and NBC Universal. They all had interesting opportunities, yet unintentionally, I made contact with several museums, such as the Getty, LACMA, and the Japanese American Museum. I got particularly interested in the Wende Museum, a private museum that specialized in Cold War era collection. The recruiter emphasized that the internship would be very hands-on, since the museum was in the process of rehousing its collections. I had always been very interested in history and art, so I thought it would be a unique chance for me to combine my studies with my interests.

I began to intern in the Wende Museum in summer, 2018. While working in its Collection Department, I learned more about how to use databases, such as Mimsy XG to catalog and the preferred ways to rehouse various collections from textiles to household products. It was indeed an extremely hands-on experience that helped me combined theory with practice, and I found that I really enjoyed working in a museum environment. It was a refreshing feeling to be able to immerse myself in art and material cultures daily. The workplace was also very dynamic, which allowed me to observe how different departments such as educational and curatorial work together. It helped me bridge out my interests and allowed me to explore other areas in the museum fields that I might potentially be interested in. I was also fortunate enough to work briefly with a curator during the internship, and that was the first time I was introduced to curation. Even though I did not have sufficient knowledge in that area yet, I was fascinated by how dynamic and how much creativity a curator needed to put in.

In fall quarter 2018, I started to intern in the Getty Conservation Institute. I worked in the information center to help them identify relevant literature and update databases. The internship taught and familiarized me with various cataloging systems, databases, and research tools, such as AATA, EndNote, and WorldCat. I also became more organized as I needed to create several spreadsheets to present my findings in structural ways to my supervisors. This opportunity reinforced my interest in working in the museums, and I got immense satisfaction knowing that I discovered new relevant literature that would be added to the databases. I also had a chance to connect with people from the special collection and attended workshops. Right now, I am certain that I would like to work in the museum fields, and working in information organization and catalogue in the museums will be my first step as a museum profession.

From the start of the second quarter, I began to take classes both in informatics and media preservation. I soon realized that I was particularly interested in the interactions between users and technologies. The major paper I chose was from Archival Description & Access course, which I discussed how to design more user-friendly archival finding aids. The topic is highly related to my portfolio topic on how to improve museum virtual reality tours' discoverability and accessibility online. In the UX Design course, my group and I examined museum apps from around the globe and analyze their pros and cons in order to develop an app prototype for Museo Egizio in Turin. These projects combined with the knowledge I gained from enrolling in Human and Computer Interaction made me interested in working with databases and cataloging, since I believed having knowledge on how behind-the-scene operates first could guide me into understanding more on how to help the external users.

Since now I realize that my real interest is working in the museum fields, especially in the art museums, I begin to research into relative disciplines, while enroll in classes that I know will be the most relevant, such as Issues & Problems in Preservation of Heritage Materials and Digital Humanities, as well as informatics classes, such as Subject Cataloging and Data Curation that would further advance my skills in cataloging. At the same time, I applied for internships and volunteer opportunities in various museums in hope to understand the field more. As I began to learn more about myself, I also came to realize that I would potentially want a dynamic career, so I am also considering to go on to curatorial and conservational aspects of the museums, and I am fortunate to branch out by interning in Fowler Museum's conservation department, which I learned to write condition and treatment reports, as well as basic conservation skills.

Currently, my goal is to work or intern in the museum information or collection department on information management, with expanding to curation or conservation in mind. I also joined SAA and went to library tours hosted by SLA in hope to expand my horizon; I plan on going to SAA Conference this year. I know I will need to build up more experiences and knowledge before I can enter into either of those disciplines, since there are significant amounts of requirements, such as art history, general chemistry knowledge, and fieldworks. I hope to explore and take classes on relevant subjects as my future professional development. With the knowledge in information science, and either curation or conservation, I hope I will be able to build a more exciting and fulfilling career in the museum field.

MAJOR PAPER

Course: IS 438B Archival Description & Access
Title: User-Friendliness in the Age of Digital Finding Aids

This paper ties into my portfolio topic by advocating the need for improvements in digital finding aids' user-friendliness. Similar to my issue paper, this paper also uses case studies then compare and contrast them in order to find best practices.

User-Friendliness in the Age of Digital Finding Aids

Abstract: The paper will look at how the archives can improve digital finding aids to make them more user-friendly. By looking at two university finding aids as case studies, this paper concludes the three most important elements that finding aids should improve upon now: visualizations, terminologies, and structures. It also suggests bringing in other disciplines, such as museum studies, digital humanities, and user-experience fields to provide more insights for future digital finding aids.
Keywords: archival finding aids, user-friendliness, user-experience design, digital humanity

Archivists create finding aids for their collections in order to make them more accessible and searchable for the users. However, it has been an ongoing challenge for the archivists to create more user-friendly finding aids. Users often find finding aids confusing and hard to navigate. This paper attempts to address finding aids' discrepancies between the archivists and the users, and how to improve the design of archival finding aids by reviewing two university finding aids. After that, the paper will draw from different disciplines to suggest helpful references and potential solutions.

History of Finding Aids

The finding aid is a subject that is much discussed in the archival field, since it is an important tool to bridge archivists and users. The Society of American Archivists (SAA) defines a finding aid as 1. A tool that facilitates discovery of information within a collection of records; 2. A description of records that gives the repository physical and intellectual control over the materials and that assists users to gain access to and understand the materials[1]. It is important to note that these two definitions emphasize that finding aids go both ways; it is not exclusively for archivists, nor for users. Yet, when finding aids migrate from analog to digital, user-friendliness

[1] "Finding Aid | Society of American Archivists." n.d. Accessed March 16, 2019.

becomes an important factor that is previously unforeseen. The following will describe more of its transition.

Within the United States archival context, the finding aids encompass a wide variety of formats, including but not limited to index cards, inventories, and container lists. Initially, finding aids are more for administrative purposes, helping archivists to identify, analyze, collect, and control their collections. Yet as scientific research increases its demand in the latter half of the 18th century, archivists begin to do item-level descriptions that help researchers better understand their materials, which blur the line between arrangement and description of the collections. For the more modern approach of archival science, which emerge in the 19th century, archivists begin to focus more on provenance (respect de fonds) and original order, putting the arrangement in front of description [2].

Finding aids then go through dramatic changes when the web emerge a few decades ago. As cataloger J. Gordon Daines III & archivist Cory L. Nimer write in their article "What Do You Mean It Doesn't Make Sense? Redesigning Finding Aids From the User's Perspective" that the "ability to access information digitally is changing the way that users access information about archival and other research collections" [3]. During the age of analog finding aids, users depend heavily on archivists to help them retrieve information that they desired. Therefore at that time, the finding aids are more for archivists than users, since they have limited interactions with them.

However, as finding aids turn digital, archivists are no longer the only users of finding aids, since they are now accessible via the web. The users can simply go online, look at the finding aids, and locate the materials they want. Therefore, the urgency to design user-friendly finding aids becomes more crucial. Unlike analog finding aids, digital finding aids slowly revolutionize the ways in which the archivists and the users view and use them, since they are so malleable than static analog finding aids.

Literature Review

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[2] Ciaran B.Trace, and Andrew Dillon. 2012. "The Evolution of the Finding Aid in the United States: From Physical to Digital Document Genre," *Archival Science* 12 (4): 504–505, https://doi.org/10.1007/s10502-012-9190-5.

[3] J. Gordon Daines, and Cory L. Nimer. 2011. "Re-Imagining Archival Display: Creating User-Friendly Finding Aids," *Journal of Archival Organization* 9 (1): 217. https://www.tandfonline.com/doi/abs/10.1080/15332748.2011.574019.

In the past few decades as digital finding aids become more prominent, increasing amount of scholarly research and articles begin to emerge. Finding aids are not something the archivists have total control of any more, as more and more users prefer digital finding aids as their primary means of accessing archives' collections, rather than go to archives physically to ask for the archivists' assistance [4]. With more and more users depend on digital finding aids, they have often been criticized as hard to use, but that is not something the archivists deliberately do as Lawrence Dowler analyzes the problem more than three decades ago that it is difficult for the archivists to develop user-friendly finding aids since they barely have any ideas of how the users utilize them [5].

However, the archivists and the scholars are trying to understand and improve in the past two decades, as seen more and more usability research regarding finding aids appear. In 2001, Burt Altman and John R. Nemmers conduct a usability study with Claude Pepper Library collection's online finding aid in Florida State University. The results are generally positive with users claiming that it is helpful to understand the collection by navigating through the finding aid, but suggest that it can add item-level descriptions to make the collection clearer [6]. In 2004, Jihyun Kim conducts usability research focusing on Encoded Archival Standard (EAD), its implementations on the finding aids. She concludes that EAD finding aids should provide more control access headings, so the users have more ways to discover the collections; labels should be easier to understand; browse list should be more clearly listed, and search function should also be improved, since it is more widely used than the browse function [7].

Some other scholarly pieces look at specific finding aids that help identify the pros and the cons. In 2011, J. Gordon Daines III and Cory L. Nimer look at Brigham Young University's finding aid as a proof to show that single-level display can transform the performance of the

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[4] Rachel Walton. 2017. "Looking for Answers: A Usability Study of Online Finding Aid Navigation," *The American Archivist* 80 (1). https://doi.org/10.17723/0360-9081.80.1.30.

[5] Richard J. Cox. 2008. "Revisiting the Archival Finding Aid," *Journal of Archival Organization* 5 (4): 10. https://doi.org/10.1080/15332740802153245.

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[7] Jihyun Kim. 2004. "EAD Encoding and Display: A Content Analysis." *Journal of Archival Organization* 2 (3). https://doi.org/10.1300/J201v02n03_04.

finding aid and potentially improve user-experience[8]. In 2017, Rachel Walton in her article "Looking for Answers: A Usability Study of Online Finding Aid Navigation", she analyzes Princeton University's finding aid and discovers several problems that need to be improved in the usability research. The paper will explore these two case studies further later on.

No matter what aspects of those scholarly researches focus on, whether they are the descriptions, the interfaces, or the archival standards, almost all of them can be boiled down to several main points that will be helpful to improve the overall finding aids: hierarchical display of finding aid information, item-level access, text blocks, and terminology [9].

Although there is substantial amount of research on finding aids' usability, there is a lack of literature that ties archival finding aids into other disciplines of studies. One of the biggest problems for finding aid is the lack of visuals. In "Conceptual Data Visualization in Archival Finding Aids: Preliminary User Responses", Anne Bahde attempts to bring in the digital humanities field to turn abstract data into visualizations to make finding aids more searchable and interactive. Besides this research, archival scholarly pieces generally look only in the archival field. This paper tries to fill in the gaps by bringing in other disciplines, such as museum studies, digital humanities, and user experience design. Those fields have the potential to provide insights towards developing more user-friendly finding aids.

Case Studies

As mentioned previously, this paper will review two research projects regarding two finding aids: a Princeton University finding aid and a Brigham Young University finding aid from the articles "Looking for Answers: A Usability Study of Online Finding Aid Navigation" and "Re-Imagining Archival Display: Creating User-Friendly Finding Aids" respectively. After reviewing them, the paper will analyze and make conclusions referring to the authors' opinions on what are the top three most important elements that finding aids should improve on right now.

In "Looking for Answers: A Usability Study of Online Finding Aid Navigation", Walton conducts usability research looking at what are the difficulties a group of relatively inexperienced users (10 undergraduate English-speaking students without any vision, hearing, or

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[8] Daines and Nimer, "Re-Imagining."
[9] Daines and Nimer, "Re-Imagining," 7.

motor impairments) have when they navigate through the Princeton University finding aid website.

The Princeton University finding aid greets its users with a relatively clean interface. It is easy to find the search bar that is located in the middle of the interface. Down below, the users can explore by "topics", "names", and "collections"[10]. After typing in subjects and clicking enter, the finding aid provides a useful sidebar that labels "repository", "online access", "subject", "genre", "language", and "collection" for the ease of categorizing the collections[11]. When entering the desired subject, there is another sidebar that will show the whole structure of the finding aid, which is helpful for the users to navigate through the information they are seeking [12].

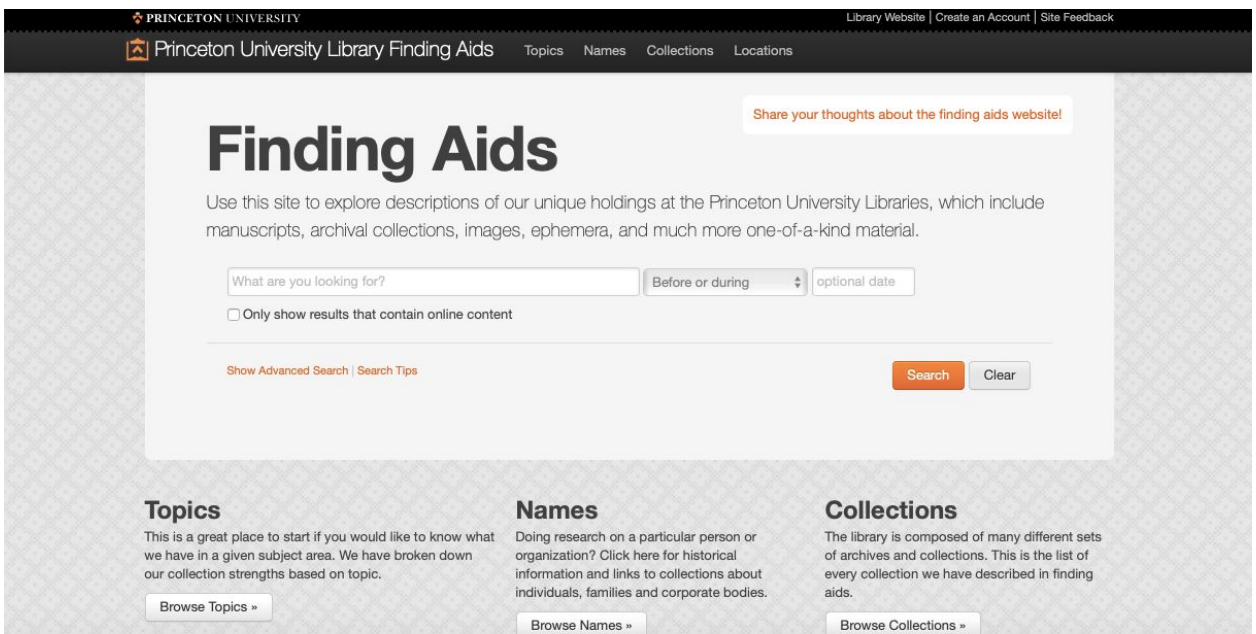

Figure 1: Princeton University Library Finding Aids Homepage

[10] Figure 1. "Princeton University Library Finding Aids." n.d. Accessed March 16, 2019. https://findingaids.princeton.edu/.
[11] Figure 2. "Princeton."
[12] Figure 3. "Princeton."

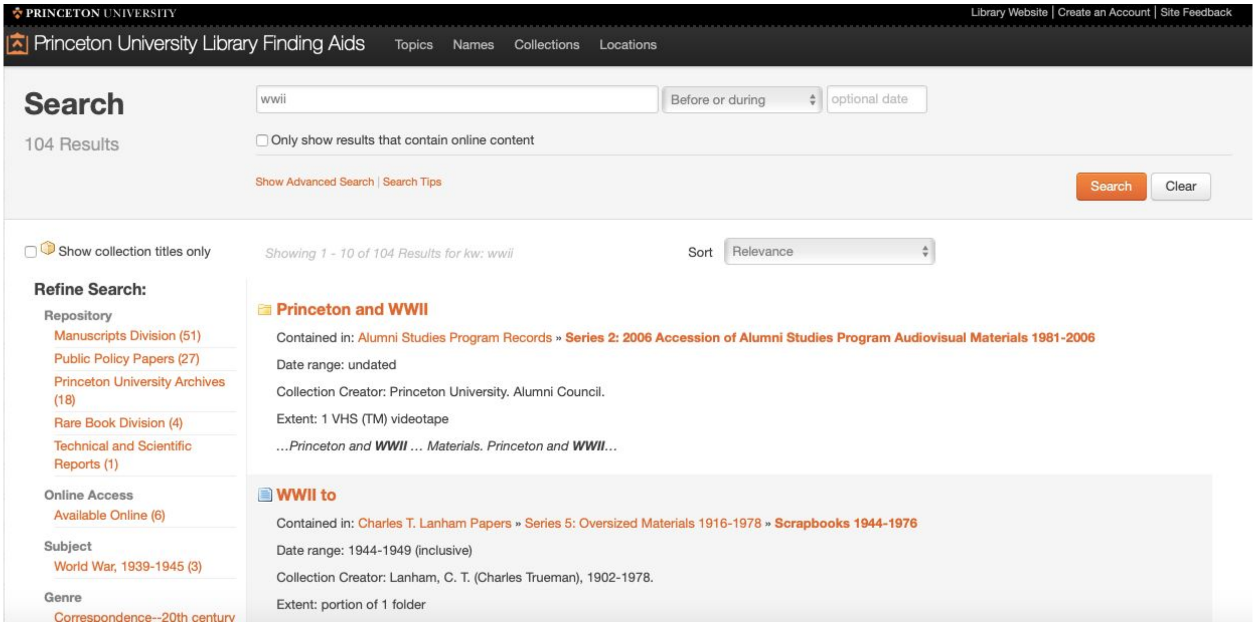

Figure 2: Search Results after Entering Subjects in the Homepage Search Bar

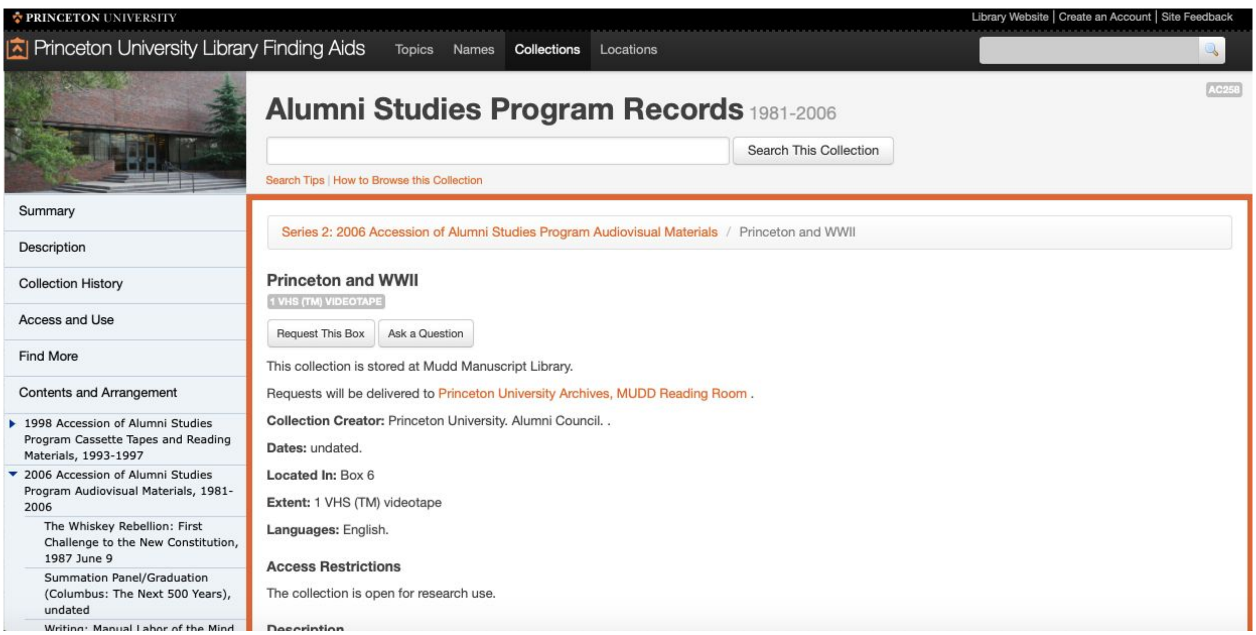

Figure 3: Individual Result with Content and Arrangement on the Left Sidebar

From her usability survey, Walton concludes that in general, the users are satisfied with the experience. The interface is clean and clear, and the users do not have a hard time finding what they want. However, there are still places for improvements. First is the lack of visuals. In general, finding aids describe the collection rather than have pictures of the collection, because unlike museums, documents are predominantly what archives collect. However, as archives' collections expand and become more diverse, it is not clear to just "describe" the items, since it can be subjective and inconsistent, as shown in the blog post from the UAA/APU Consortium Library that "I believe that all archivists approach the description process itself differently—we each have different and unique ways we consider information. I also know that the process I take to describe one collection may not be the same process I use on the next collection"[13]. Some other complaints include difficulties to find the biography information of the creators (the finding aid puts it in a separate page). In conclusion, she mentions 10 major points that archivists should take into account when developing finding aids, including clear structures, avoid jargons, and increase visuals.

In another study, "Re-Imagining Archival Display: Creating User-Friendly Finding Aids", J. Gordon Daines, III and Cory L. Nimer advocate single-level display believing that it could more clearly show how the finding aid is supposed to be. They use Brigham Young University finding aid to prove their points. To keep the interface with minimum text, the users see a very clean homepage that has a search bar in the middle, and a small gray box on the right titled "site navigation" with subjects such as "browse" and "help"[14]. The texts are also kept in minimum as only essential details are present. The information such as "extant" and "call number" are on the top and the users can click through more information "full detail" and "admin info" on the bottom[15].

[13] "Describing Collections: Introduction." 2017. *Archives and Special Collections* (blog). January 6, 2017.
[14] Figure 4. Daines and Nimer, "Re-Imagining."
[15] Figure 5. Daines and Nimer, "Re-Imagining."

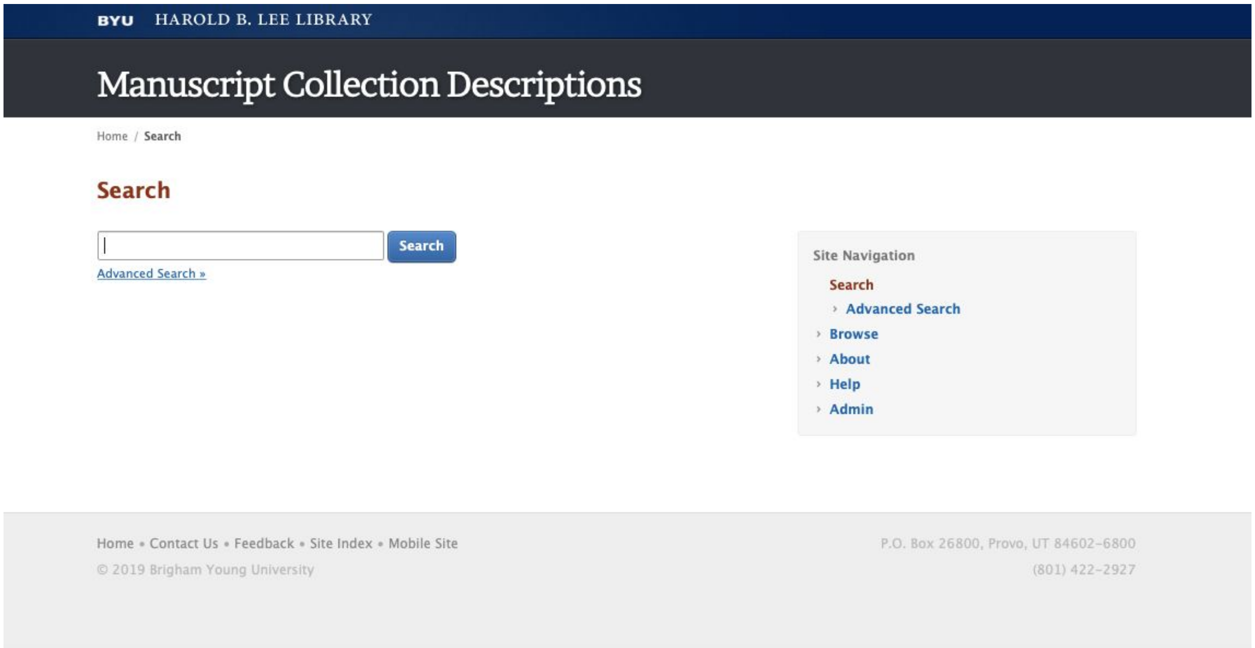

Figure 4: Brigham Young University Online Finding Aid Homepage

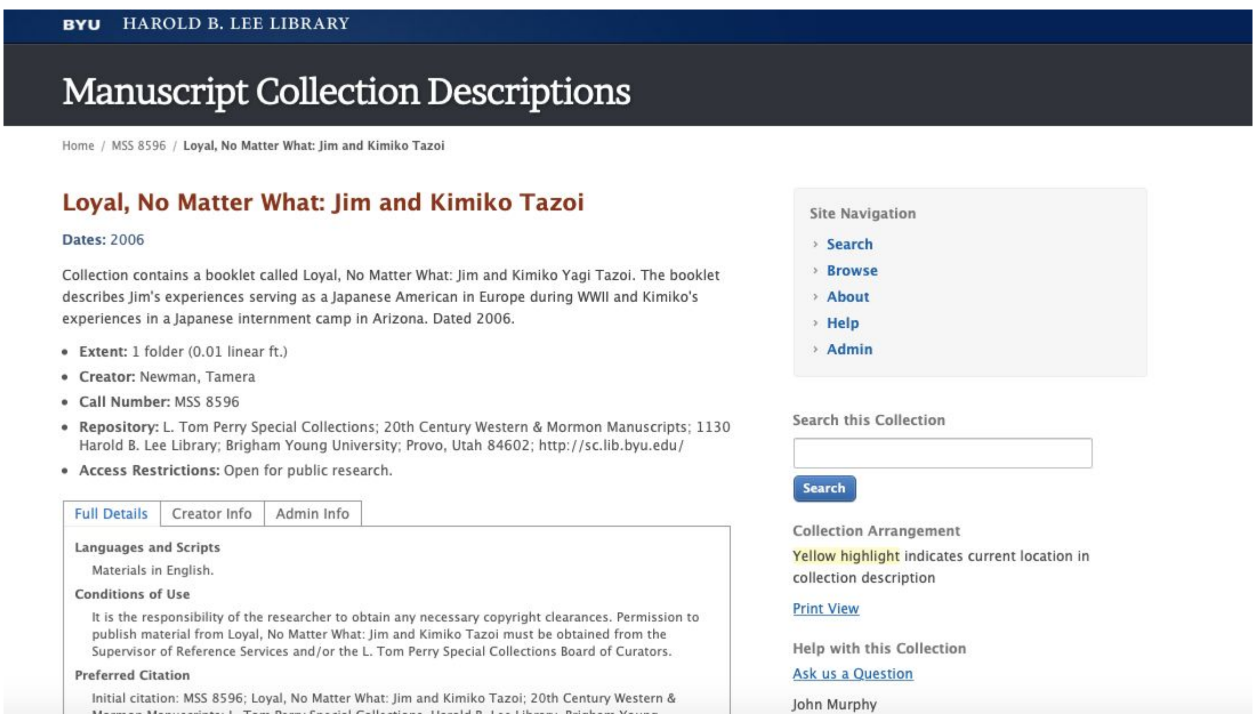

Figure 5: One of the Search Results. Note the Users can Click through Full Details and Admin Info at the Bottom

The authors claim that the elimination of hierarchy, instead of presenting the collections in item-level display will be more helpful for the users, since they do not need to click into each collection to find the items they want, rather, they can quickly find the items and determine whether or not they need to contact the archive to look at the items. Moreover, they stress the importance of terminologies that aim to be easy to understand and a clear interface for smooth navigation. They also acknowledge the duel needs of finding aids as administrative and access tool, but should not "drive user-interface design decisions" [16].

While analyzing different finding aids, it is important to remember that even though all finding aids share similar elements and goals, they vary due to the fact that different institutions have their own focuses and priorities. Some institutions might focus more on standards, while others might emphasize more on the descriptions of the collections. However, the purposes of the finding aids are all the same "*preservation* of historically and administratively valuable documents, and *public access* to those preserved materials" [17]. As digital finding aids become more wide-used, public access aspect becomes increasingly important. Therefore, though it is crucial to put into considerations that institutions are all different, basic accessibility functions and user experiences are all similar.

Case Studies Analysis

From the two case studies: Princeton University Finding Aid and Brigham Young University Finding Aid, the paper will choose and analyze three most important elements that the finding aids should improve upon to make them more user-friendly: visuals, terminologies, and structures. The paper is also going to suggest bringing in other fields, such as museum catalogs and digital humanities that might further advance finding aids.

In general, archival finding aids lack visualizations. In this case, the visualizations include static images showing the collections and visual cues that help the users to more easily navigate through the finding aids. Both Princeton University and Brigham Young University finding aids research show that users, in general, wish to have more visual cues and less text. However, it is

[16] Daines and Nimer, "Re-Imagining," 21.

[17] Kate Cruikshank, Caroline Daniels. 2005. "How Do We Show You What We've Got? Access to Archival Collections in the Digital Age." *Journal of the Association for History and Computing* 8 (2).http://hdl.handle.net/2027/spo.3310410.0008.203.

understandable that finding aids lack visuals, since unlike museums that are extremely visual-based based on more object-oriented collections, archive collections generally are more on document-based materials side. Therefore, archivists tend to simply describe the items as certain types of documents such as dairy, scrapbooks, or newspaper without giving too much further descriptions. Although this might be sufficient in a way (the users can request further details if they are interested), a lot of time it is not enough, and the users might request them and find out they are not what they want, which waste both the users and the archivists' time.

The paper will give an example of when the author is working with actor, musician, Theodore Bikel's collections in UCLA Special Collections, the team encounter a lot of physical objects other than document-based materials. In one box, there are his various awards, certificates, and plaques from 1958 to 2015. Even though some of them are easy to imagine how they look physically, such as a piece of paper certificate or a wooden plaque, Bikel is also awarded two "keys" to Miami Beach, Florida. It is understandable that the users might be confused. What kinds of keys are they? Are they actual keys? What do they look like? If the archivists can provide images of them, it might be extremely helpful for the users [18].

Another aspect of lacking visuals is that users often complain that it is easy to get lost within the finding aids. Often, there is too much information going on, the users scroll and scroll than they are confused within all those levels of information and text. In Walton's study, the participants complain that "It took me a long time to figure out how to sort items by date because I didn't couldn't see the arrow that was a clue for the feature...It was hidden" and "Clicking on the column header to reorder the items was tricky...It seems like you'd have to know about the button already in order to use it in that way". Walton concludes those failures are due to the lack of visual cues than inappropriate navigational components [19].

It is suggested that archival finding aids can look at how the museum catalogs present their collections. Although slightly different than finding aids in principles, museum catalogs are also the most important way for the users to engage with their collections. Likewise, museum catalogs also affected by the transition from analog to digital. In a report by the Getty Foundation

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[18] "ArchivesSpace." Accessed March 16, 2019. https://archivesspace.org/.
[19] Walton. "Looking for Answers," 43-44.

states that they are going to advance their online catalogs and make them more discoverable and interactive:

> Global audiences could engage with the latest scholarship unfolding thousands of miles away. Readers could zoom in on high-resolution images of artworks and study them in dialogue with conservation documentation. Video and audio clips could bring the voice of the curator, conservator, or artist into the space of the catalogue. Researchers could take notes in the margins and store them for later use or post comments for discussion with other scholars [20].

All those functions might be too much for the archives, but it might also be a good direction for future archival finding aids that value more on visualizations and organizations. Although visuals still cannot represent the whole object in a clear way, such as its texture, it gives the users a clear sense of what the objects look like. They no longer need to imagine the objects from abstract text descriptions.

Besides visuals, which might tend to be more static, if archives look for more interactive ability as technology becomes more and more advanced, it is also a preferable idea to look into the digital humanities field. Digital Humanists transform data and text into visualizations that not only allow the users to understand more easily, but through a series of interactions, such as maps or videos that make even deeper impressions on the users. In Anne Bahde's article "Conceptual Data Visualization in Archival Finding Aids: Preliminary User Responses", she attempts to consolidate the idea of data visualization with archival finding aids, then develop two types of new finding aids to conduct user-experience research. The research finds that users appreciate data visualizations which allow them to explore certain aspects of finding aids without reading a large chunk of text. For example, for the biography and historical notes, instead of a long text, users will be able to navigate through timelines to help them understand more easily "Beginner users were particularly enthusiastic about this tool, and many commented that they especially appreciated the ability to explore a life or a history in a non-textual way" [21]. It might be a helpful

[20] *Museum Catalogues in the Digital Age (OSCI Final Report)*. 2017. The Getty Foundation, Los Angeles.
[21] Anne Bahde. 2017. "Conceptual Data Visualization in Archival Finding Aids: Preliminary User Responses." *Portal: Libraries and the Academy* 17 (3): 495. https://doi.org/10.1353/pla.2017.0031.

way for finding aids to make more impressions on the users and provides an alternative way to rethink the formulations of finding aids.

Besides the lack of visualizations, the terminology is another aspect that users struggle upon according to the case studies. Unlike visualizations that might still be slightly subjective for different users, since people are likely to have different visual interpretations, the usage of terminologies is a concrete example that shows the discrepancy between the archivists and the users. It is easy to understand why this problem arises; when archivists create finding aids, it is natural for them to use their expertise to create them, thus add in professional jargons or terms that are familiar to them, yet not to the users. To avoid professional terms has been recognized in the archival field as one of the characteristics that makes the finding aids successful: “[Finding aids] are written in clear understandable language devoid of jargon” [22]. This is not as difficult to change as the visualizations, since archivists only need to pay a little more attention to the terminologies, the problem can easily be solved.

It is also suggested that archives can refer to museum apps that aim to use simple and straightforward vocabularies to represent their collections. Museum apps are particularly helpful in this respect because they are designed for users that do not have a lot of time: it is designed as on the go tools that accompany the users when they visit the museums. Therefore, the terms are often simple and easy to distinguish. Although finding aids are not something on the go in most of the time, the users do wish they can find the information they want as soon as possible without the impediment of terminologies.

Besides terminologies, finding aids’ structure is another problem that is being identified. In Brigham Young University finding aid example about the structure, it is actually closely related to how users generally dislike a large amount of text, since it often obscures what they really want to find and make the whole task daunting as they scroll through pages and pages of text. Thus, Brigham Young University purposes to make its interface clean and more user-friendly by suggesting that lower level details about the collections should be hidden to avoid large text, but the users can request them if they want to. Princeton University finding aid also suggests the

[22] MARAC, n.d. “Characteristics of Successful Finding Aids.”Accessed March 16, 2019.

same thing. However, even though this approach successfully solves the overwhelming text problem, the lack of lower-level descriptions might also cause problems: if a collection item sounds relevant, before requesting it, the users will like to know more about it, or else it is a waste of time for both the archivists and the users. Without lower-level descriptions, it might be hard to know.

Although Describing Archive: A Content Standard (DACS), a series of rules that provide consistency for the archival materials, does not require item-level descriptions, as mentioned previously, it is still important to describe item-level for clarity. However, the problem is how to balance between clarity and avoid a large amount of text that confuses the users. Recently, Linked Data becomes an area that archives are eager to explore. The idea is to link the collections to primary sources that enrich the users' experiences: "... these improvements can help overcome the well-known limitations of subject headings and imprecision of keyword searching, facilitate comparisons of historical data across space and time, and enable work across multiple collections" [23]. It might be a good way for the finding aids to link to more detailed descriptions and the background of the items to give the users a better sense of understanding, yet at the same time successfully avoid making the interfaces too wordy.

As finding aids turn digital, finding aid software start to develop to make the archivists' lives easier. Linked Data might potentially help make the software even more user-friendly. Currently, more and more archives begin to use an open source application called "ArchivesSpace", a web-based archives information management system that makes creating finding aids simpler. Its mission statement is: "ArchivesSpace is a community of mutual support committed to helping cultural heritage organizations foster access to, and promote discovery of, historical records and primary sources through the provision of sustainable and highly functional software and tools" [24]. Although ArchivesSpace is a convenient and fast tool to use, it can only generate finding aids that are in static PDF formats thus the users cannot navigate within. The paper suggests that the Linked Data idea can help ArchivesSpace creates more dynamic finding aids that give users a better sense of understanding regarding the collections, yet still keep the interfaces organized.

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[23] Thea Lindquist,, Michael Dulock, Juha Törnroos, Eero Hyvönen, and Eetu Mäkelä. 2013. "Using Linked Open Data to Enhance Subject Access in Online Primary Sources." *Cataloging & Classification Quarterly* 51: 917. https://doi.org/10.1080/01639374.2013.823583.

[24] "ArchivesSpace."

It might also be helpful for the archives to look into user-experience design fields, as digital finding aids become increasingly user-oriented. While there is more and more research on usability in terms of finding aids, the research generally does not use specific tools to examine usability, rather than just focus groups and surveys. These tools that are common for assessing usability in the user-experience field might be helpful for archives which have limited budgets and time to assess whether their finding aids are user-friendly by arranging group studies. Those tools include personas, which can help archives identify their targeted users and what kinds of challenges they might face with the archives' finding aids, or user experience map that assess users' utilization processes and their emotional reactions throughout the journey. Those tools might be helpful and effective for small-scale assessments in the archives. Steve Krug's popular Human-Computer interaction book "Don't Make Me Think" can also be of help as it describes how to make interfaces as easy and as direct as possible.

Limitations and Potential Solutions

Although the above changes from visuals to structurals might not be as complicated as it seems, it still poses problems for the archives to implement them. A lot of time it is not the archivists who do not want to change, rather, it is the institution as a whole that has a hard time. Two of the biggest problems that slow down changes are budget and the different mentalities between the archivists and the users. Even though such as adding the collection pictures on finding aids should be easy theoretically, it still requires the program to change in order to do so, which might cause difficulties for the archives. In general, archives have limited budget, and improving the usability of the finding aids might not be the priority for most of them. According to SAA, an archive:

> Refers to the permanently valuable records—such as letters, reports, accounts, minute books, draft and final manuscripts, and photographs—of people, businesses, and government. These records are kept because they have continuing value to the creating agency and to other potential users. They are the documentary evidence of past events. They are the facts we use to interpret and understand history [25].

[25] "Society of American Archivists."

Thus under this general archive mission, it is hard to prioritize the budget towards improving the interfaces of finding aids, rather than protecting and allowing access for the actual materials. However, digital finding aids might have advantages to potentially solve this problem than analog finding aids due to the world-wide-web. The digital finding aids have much more potentials in inviting the collaborations between different archives and thus lower the cost. Archives are also able to share their findings and collaborate online that make the whole process much easier.

There is more and more research on how to lower the budget, yet at the same time increases usability. In the article "Leveraging Encoded Archival Description for Access to Digital Content: A Cost and Usability Analysis", DeRidder, Presnell, Walker propose a method that links digitized items directly to the web in order to speed the process up and lower the cost. This method omits the part in which archives need to create item-level metadata, which helps digitized a large amount of collection with much lower cost, and the users can connect with the collections more by getting more insightful information [26]. This might be a practical method for other archives to look into and it ties to the previously mentioned Link Data that can keep the interfaces clean, yet still have sufficient information on the item level for the users and the overall cost will be lower.

Besides Link Data, collaborations between different archives on the web can also lower the cost and make finding aids more effective and helpful. In the article "Social Networks and Archival Context: From Project to Cooperative Archival Program", SNAC "is a multiyear research and demonstration project that aims to address the longstanding research challenge of discovering, locating, and using distributed historical resources" [27]. It attempts to change the way on how access points work, and turns it into more dynamic and richer information. Although SNAC still leaves a lot to be desired since it cannot calculate and organize all the data, it does provide insights on how finding aids can be, not just a static document: "SNAC now has as its

[26] Jody DeRidder, Amanda Presnell, and Kevin Walker. 2012. "Leveraging Encoded Archival Description for Access to Digital Content: A Cost and Usability Analysis." *The American Archivist* 75 (1): 143. https://doi.org/10.17723/aarc.75.1.5641v61p422u0u90.

[27] Daniel Pitti, Rachael Hu, Ray Larson, Brian Tingle, and Adrian Turner. 2015. "Social Networks and Archival Context: From Project to Cooperative Archival Program." *Journal of Archival Organization* 12 (1–2): 78. https://doi.org/10.1080/15332748.2015.999544.

objective the establishment of a sustainable archival cooperative program—representing the input of archivists, librarians, and scholars—who will collectively add to, edit, and maintain the vast data amount of data extracted and assembled in the first and second phases of the project" [28].

Besides the budget problem in archives that make them have a hard time implementing more user-friendly finding aids, another problem to address is the different mentalities between the archivists and the users that cause difficulties. It is understandable that archivists, who work for the collections and understand the concepts, come into making finding aids with very different mindsets than the users. The two different positions make them focus on different things and they will present them in different ways. Even though more archivists start to put in mind the users' needs, there still seems to be a long way to go. As archivist Richard J. Cox mentions from the results of multiple user studies that the archivists: "prepare their finding aids in a language and manner they are more comfortable with than are the researchers seeking to use archives, and they maintain the same content and format of the finding aids even as they have learned that researchers and their expectations are changing" [29]. Another archivist, Elizabeth Yakel, also states: "even in the digital environment (such as in EAD), archivists treat the finding aid as a document genre, rather than as a set of discrete data elements" [30]. The mentalities of the archivists might take times to change, yet from the increasing scholarly sources that show the focus on user-experiences increase significantly, it is confident to say that the archivists begin to understand more from the users' viewpoints.

Conclusion and Further Studies

It is a good sign that more and more scholarly research focuses on how to improve finding aids by doing focus groups, which is one of the most effective ways to understand what the users really think about the finding aids' usability. However, it will be insightful and helpful to see what kinds of things finding aids can achieve by bringing other fields into archives, such as the digital humanities field as mentioned in the Conceptual Data article. Museum catalogs and user-experience fields will also be very helpful in helping the archivists to develop better finding

[28] Pitti, Hu, Larson, Tingle, and Turner. "Social Networks," 94.
[29] Trace and Dillon. "The Evolution," 515.
[30] Trace and Dillon. 515.

aids. The lack of interdisciplinary within the finding aids is something that the archival fields can improve upon further in the future.

Through archival finding aids' history and literature review, it is obvious that finding aids encounter a lot of changes from analog to digital forms both in terms of formats and how the archivists and the users view them. User-friendliness becomes a big part of what considered as a "good" finding aid. From the two case studies regarding Princeton University and Brigham Young University's finding aids, the paper concludes the three most important aspects that finding aids should focus on now: visualizations, terminologies, and structures. The paper also suggests that bringing in other disciplines, such as the museum, digital humanity, and user-experience design fields will help archival finding aids become more well-rounded. The paper also recognizes the limitations on archives' actual implementations to improve the digital finding aids due to budget and different mentalities between the archivists and the users. However, as stated earlier, the user-friendliness in archives is already becoming a huge topic, it will be exciting to see what archives is going to come up in the near future.

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Trace, Ciaran B., and Andrew Dillon. 2012. “The Evolution of the Finding Aid in the United States: From Physical to Digital Document Genre.” *Archival Science* 12 (4):501–19. https://doi.org/10.1007/s10502-012-9190-5.

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ELECTIVE 1

Course: IS 431 Archive, Record & Memory
Paper Title: Archive of Our Own and Its Invisible Force

This paper examines Archive of Our Own (AO3), a digital archive that stores a variety of fanworks. Upon closer inspections, the users do not have as much control over the archive as they initially believe. The topic relates to my research interest in how user-centric approach operates in the digital world.

Archive of Our Own and Its Invisible Force

Abstract: Archive of Our Own (AO3) is a digital archive storing a variety of fanworks. Established in 2007, it is immensely popular, since it gives the users the absolute freedom of either creating or reading fanworks. However, upon closer inspection, the users do not have as much control over the archive as they initially believe. AO3's lack of accountability and appraisal process arise a lot of controversies, such as ethical issues regarding Real People fictions (RPF) and copyright.

Introduction

Fan culture is not exactly a new phenomenon that only emerges in recent years. Before the widespread of the Internet, fans with different interests, such as in sports, movies, television shows, and music, have already come together from around the world, forming groups called 'fandom', and create fanworks for their favorite subjects and characters. With the rise of the Internet, digital archives dedicated to preserve and store fanworks begin to emerge. This paper is going to use one of the most popular and most recent fanwork digital archives 'Archive of Our Own' (AO3) as a case study to illustrate its controversies and in some aspects, the problems of digital archives in general.

AO3's primary mission is to 'serve the interests of fans by providing access to and preserving the history of fanworks and fan culture in its myriad forms'.[1] Even though AO3 seems to be designed and oriented solely for fans (the users), several uncertain aspects in this archive actually form an 'invisible' force that takes control of the users. On the surface, the users have false assumptions that they have full control over the archive, since they can upload and browse whatever they desire, yet they are not as free as they believe. The reasons lie within that AO3 does not have clear accountability and the operations behind it is not transparent to the users; it has no appraisal process; the preservation destination is unclear, and there are also copyright issues regarding fanworks.

[1] "About the OTW" *Archive of Our Own*. https://archiveofourown.org/about

Background

AO3 is created in 2007 by a fan-established organization called The Organization for Transformative Works (OTW). It is nonprofit and noncommercial, so it relies on the users' donations for operations. Besides providing access and storage for fanworks, AO3 also devotes its effort to defending fanworks 'from commercial exploitation and legal challenge'.[2] A fan can choose to become the user by simply setting up an account consists of an email address, a password, and a username (pen name). Fans not wanting to register are still able to access fanworks; the only difference is that they cannot post their own works or leave comments.

Without viewing AO3 critically, it is easy to assume that the users really are in full control. First and foremost, it is open to everyone around the world. In fact, one of the most prominent archival practices is accessibility, and in theory, every single person should be granted access to archives. Yet in reality, there are a lot of restrictions posted either by governments or institutions. Some require researchers to write permission letters way in advance, and some only allow access to the people who hold citizenships in certain countries.[3] None of these restrictions exist in AO3. No matter where or who the users are, they are free to access all the contents on it as long as they have Internet connections. Therefore, it is not surprising to believe that AO3 gives the users full control.

Not only do the users have free access to any contents they want on AO3, they also do not need to fear that the archive will take down their works without notifying them. This feature is largely in response to another fanwork digital archive, Fanfiction.net. It is created in 1998, and is one of the largest and most popular fanfiction archives in the world. However, as the demand increases, Fanfiction.net decides to profit by employing advertisements, causing certain fanworks being banned or delete from the site, because of this incident, a lot of users have lost their works permanently.[4] With that in mind, the AO3 users have confidence in believing that they are still in control over their own works even after they post them on the website.

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[2] "About the OTW"
[3] Laura A. Millar. *Archives Principles and Practices*. (London: Facet, 2017), 244.
[4] Nicole Pellegrini, "Fanfiction.Net vs. Archive of Our Own" last modified February 14, 2017. https://letterpile.com/writing/fanfictionnet-vs-archive-of-our-own

Aside from these two features, AO3 is also an archive that requires no fee and has no advertisements. Unlike the majority of the fandom social media, such as Fanfiction.net, Tumblr, and LiveJournal, which either imposes an annual fee or has advertisements, AO3 is very clear on making no profit from it. For the AO3 users, the freedom to access and post any contents they want with no fee and no fear of them being taken down are enough for them to believe that this is truly an archive for the users.

Trust, Accountability, and Transparency in AO3

Since in the eyes of the users, AO3 is so free of intervention; it is easy to fail to consider what kind of organization is in charge of this archive, and how the organization structures. With physical archives, there is clear-cut information on which organizations are in charge and how they operate. For example, The National Archives and Records Administration (NARA) is a governmental agency that maintains United States government's documents, records, and makes them available to the public. This is similar to the community archives that exist in physical forms, such as ONE National Gay & Lesbian Archives, which is maintained by the University of Southern California and preserves records related to the LGBTQ society. Both of these examples have clear agencies as to who is in charge, and the public can easily understand their missions and duties by browsing through their respective websites or visit the archives in person.

However, it is unclear what kind of organization is in charge of the digital archive AO3. The only thing users know about is that it belongs to an organization called 'The Organization for Transformative Works' (OTW), and is established by fans in 2007. It lists a few major projects that it is currently working on, such as shelters at risk fanworks, defends fanworks from legal prosecutions, and has peer-reviewed scholarly journals aim to promote scholarship on fanworks and practices.[5] Unlike NARA or ONE, it is completely unclear as to whom OTW answers to: Is it an independent agency? Or does it have a parent organization? What sort of fanworks does it store, and who exactly are those 'fans' that established the organization?

In physical archives, it is also easier to find the archivists that are responsible for them. From the NARA website, there is a list of archivists for people who are interested in contacting them.

[5] "About the OTW"

On ONE's website, there is an even more detailed list of archivists' information. It has their names, titles, and email addresses that can give people a clear sense as to who are the archivists that are responsible for the materials and where they can express their questions as well as concerns.

Compare to NARA and ONE, the archivists who are responsible for AO3 are barely visible. The people working for AO3 can be roughly categorized into two: 'volunteer' and 'staff'. 'Volunteer' can be anyone who is over 13 years old; 'staff' is those working on the OTW committee; their works often require more time commitment than volunteers.[6] There is a list of short biographies of each staff member, yet not only do they have no contact information, a lot of them represent themselves using pen names instead of their actual names. This not only causes a lot of doubts about the identities of those staff members, but also start the question on how trust-worthy is AO3 and its organization OTW.

It is often not enough to simply list the job title of an archivist. To make the organizations more transparent and trustworthy to the people, they will also list out the duties of the archivists. On the website of NARA, it has detailed list on the duties of different kinds of archivists, such as the duties of archives specialists and archives technicians, or different fields of works that contribute into this, such as conservators and photographers.

However, the responsibilities of the archivists in AO3 are much vaguer. The volunteers' duties include coders, testers, and translators for the webpage guidelines and Q&A. But when there are no openings, the users are unlikely to find more details on those job descriptions. It is similar to the staff's job descriptions. AO3 only has a vague statement saying that the staff is required to serve on the board committee, yet there is no further information after that.

Without knowing what kind of an organization is in charge of AO3, it is hard for the users to place trust on it, as archivist and record manager Geoffry Yeo argues about the importance of an institution's reputation: "… the professional archivist and the archival institution still have key roles to play in securing trust… we trust the reputation of an established name, so when we come to assess statements about the provenance or context of records and archives we may be more likely to trust those made by people or institutions we perceive as reputable and competent"[7].

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[6] Ibid.
[7]Geoffrey Yeo. "Trust and Context in Cyberspace," *Archives and Records* 34, no.2 (2013): 226. https://doi.org/10.1080/23257962.2013.825207.

Taking off trust in AO3, the users will likely feel that a large part of their controls over the archive is gone, since they have no idea how the organization operates and what sort of a move it will take next.

Trust is built on accountability and transparency. To establish that, the identities and responsibilities of the archivists need to be clear, so the users will know who take the responsibilities and where to seek answers when they have concerns. In Verne Harris and Christopher Merrett's book *Towards a Culture of Transparency*, they analyze the responsibilities of archivists: "… in everything they [archivists] do- the records they choose to preserve, how they arrange them, describe them- and make them available- archivists are active shapers of social memory, and they in turn are positioned within, and are shaped by, the larger forces that contest the terrain of social memory"[8]. Even though AO3 seems to be a 'self-serve' archive to the users, the archivists should still take the final responsibilities towards social memory- the fan culture, in order to show AO3's accountability and trustworthiness. Yet this is not the case, the users often have problems when confronting more controversial contents within fandoms and without knowing where they can turn to.

One of the most notable controversies exists in the fandom world is the 'Real People Fictions' (RPF). It is actually a popular genre that has more than 10 thousand works with AO3. RPF is fanworks that use celebrities' real names and pair them with other celebrities. There is an ongoing debate as to whether this should be allowed or not. Some strongly against this idea as *Nightrunner* author Lynn Flewelling said: "Here's my opinion on people writing sexually oriented fanfiction about real people. It's WRONG, CREEPY, VERY EXTREMELY ICKY, and should be ILLEGAL."[9] Yet on the other side, there are people arguing that celebrities most likely do not expect any sort of privacy when they enter public lives, and even though the names are real, within fanfiction world, it is never about 'real' event, or in this case, 'real' people.

However, the real problem in AO3 with RPF is not the debate of for or against this genre, rather, it is the uncertainty of who should take the responsibility if ever any kinds of violations arise. Regarding RPF, here is AO3's policy: "Writing RPF (real-person fiction) never constitutes

[8]Verne Harris and Christopher Merrett "Toward a Culture of Transparency: Public Rights of Access to Official Records in South Africa," in *Archives and Justice: A South African Perspective*. (Chicago: Society of American Archivists, 2007): 173.
[9]Malory Beazley, "The Ethics of Real Person Fiction" last modified March 6, 2016. https://fanslashfic.com/2016/03/06/the-ethics-of-real-person-fiction/

harassment in and of itself. However, content that advocates specific, real harmful actions towards real people are not allowed."[10] Despite having this policy, who should be responsible if some users do post something harmful? Should the original writers be the one since they write them? Or should AO3 be responsible, since it is the one that allows people to post this sort of genre without censorship? Without clear-cut guidelines, the same problem is likely to come up over and over again for AO3.

Even if AO3 attempt to be accountable to the contents by adding filters, it is unlikely for it to succeed. All of the fanworks are written under pen names, and AO3 also allows people to post stories anonymously. AO3 does have a feature called 'Report Abuse', which users can submit contents they believe violate certain codes. It does not have a clear definition as to what cause as 'abuse'. The users can only assume the usual regarding creative works, such violations of copyright, or suspected plagiarism. There is not a single mention regarding moral and ethical issues within fanworks. Moreover, the report abuse page is monitored by volunteers. It is doubtful whether AO3 has a clear guideline or principles that volunteers can base on, since this kind of report seems to be highly subjective from person to person.

Appraisal and AO3

Not only does AO3's trustworthiness is in a questionable state, the lack of appraisal in the digital archive also causes some major problems. Appraisal, as American archivist F. Gerald Ham states: "Our most important and intellectually demanding task as archivists is to make an informed selection of information that will provide the future with a representative record of human experience in our time…"[11] Simply put, appraisal is an archival process, in which archivists conduct selections of records. In their opinions, the chosen records represent a period, a group of individual, or a part of a culture.

Some might question the purpose of appraisal, since it sounds easier to preserve every single record. From a practical point of view, appraisal helps reduce the growing amount of records. Initially, its primary purpose is to decrease the records used by the registry system, since there

[10] "Terms of Service" *Archive of Our Own*.
[11] Anne J. Gilliland "Archival Appraisal: Practising on Shifting Sands," in *Archives and Recordkeeping: Theory Into Practice*, ed. Patricia Whatley and Caroline Brown (London: Facet Press, 2014), 31.

are limited spaces for storage. As the appraisal practice becomes more mature, it takes on a further mission to ensure that the selections will adequately represent the underrepresented. Moreover, the reason for eliminating part of the records can also protect individuals' privacies due to the growing of unauthorized and illegal access. [12]

For AO3, there is absolutely no appraisal process. Its only mission is to 'protect all fanworks', and that is exactly what it does. As long as the user has successfully registered, he or she can post anything on the website. It can be a one-sentence work, or a novel-length story; it can be a fanvideo, a piece of fanart, or a podfic. Not a single work will go through appraisal process in AO3 to determine which should stay and which should be destroyed. Even though there are indeed some debates among the scholars arguing that whether digital archives have the need for appraisal: "… whether it is fruitful to continue to attempt appraisal, given the extraordinary volume of digital documentation being created today, and the profoundly networked nature of organizational and personal activities in the digital realm that makes it difficult to identify points of decision-making or to establish institutional boundaries around records."[13] However, regardless of how the debate goes, the lack of appraisal in AO3 already comes up with a lot of problems.

Since there is no appraisal process, the users on AO3 are free to put down anything they like, that includes the freedom to categorize their works as they wish. There are three 'tags' that the users need to fill in in order to successfully upload their works. The first one is 'Rating', which consist of four types from 'General Audience' to 'Explicit'; 'Archive Warnings', which has six categories, such as 'No Archive Warnings Apply' or 'Graphic Depiction of Violence'; the last one is which 'Fandom' does the work belongs to. One can argue that this is supposed to act as a 'rough' appraisal, since other users can search the stories they are interested in according to these categories. However, besides 'Fandom', both 'Rating' and 'Archival Warnings' consist of options called 'Not Rated' and '[Creator] Choose Not to Use Archival Warnings'. The reasons for choosing not to use these tags varied from person to person, yet by providing 'full control' for the users that create fanworks, AO3 undeniably takes some rights away from the majority of other users, the readers. The same problem emerges in the 'Additional Tags' section, which the

[12] Gilliland, 31.
[13] Gilliland, 41.

users (creators) can put in everything they like, even if some of those tags hardly related to their stories at all. Both of these show that, without AO3 doing any appraisal works, such as applying a standard for vocabularies and selections, the users (readers) will have a hard time trying to navigate the website and are likely to see something that they do not wish to see. In this aspect, AO3 does allow the users to have full control, yet only the creators, not the readers.

To apply appraisal to the archive, one of the most important factors is to preserve what deem as 'valuable' and discard all the other records that will have little value over the years. Those remaining records are supposed to be valuable since they represent the essence of a crucial part of history or culture. Therefore, when AO3 does not apply appraisal process claiming it wants to preserve all the fanworks, does that mean every piece of fanwork is equally valuable? Without proper filter and selection, how will people view certain aspects of fan culture from ten years or even more? Will the definition change for fan culture when all the fanworks are preserved for ten or more years? Those are questions that are unlikely to get answers now, yet for AO3, or any other digital archives, having no appraisal process does not mean it gives users more control, rather it creates a lot of inconceivable problems.

Preservation and Copyrights Issue

Besides the lack of accountability and appraisal, preservation and copyright issue are also something AO3 should consider. First of all, what database does AO3 use to store its data? In the essay "Digital Preservation: A Time Bomb for Digital Library", Margaret Hedstrom defines her ideal digital archive: "Ideally, storage media will have a long life expectancy, a high degree of disaster resistance, sufficient durability to withstand regular use, and very large storage capacities… Storage space requirements will be minimal and not demand highly sensitive environmental controls"[14]. Those are important factors to form a complete and safe digital archive, yet in reality, this is often not the case. In AO3, the users have no knowledge of its storage system, and have no idea as to where their fanworks will go once they hit the "post" button. This is highly problematic, since without knowing the basics of AO3's digital storage system, the users will have a hard time trusting the archive, because there is a crucial and

[14] Margaret Hedstrom, "Digital Preservation: A Time Bomb for Digital Libraries" *Computers and the Humanities* 31, no.3 (1997): 193. http://www.jstor.org/stable/30200423.

important territory unknown to them that forces them to realize that perhaps the users are not as in control of the fanworks and the archive as much as they like to believe.

Not only do the users have no idea where AO3 store their fanworks, there is also no indication in regard to space limitation. Unlike physical archives where people can see that there is an obvious space limitation, digital archives also have the same problem. AO3 never mentions about its storage limit or whether it is ever at risk of running out of space. To make it clear, digital storage requires money and AO3 does ask for users' donations from time to time. However, it never specifies how exactly do they budget this money. Therefore, for the users, AO3 still has the ultimate control over the archive.

Besides not knowing the storage limitation, there are also copyright issues in AO3. Normally, the work belongs to the creator as long as there is no problem in regard to plagiarism. However, there is one of the functions on AO3 called 'Orphaning'. This function is for the users who want to cut off any association with their particular fanworks, yet do not wish to remove them forever from the archive. The work will then link to AO3's special account called 'orphan_account', where the original creator will no longer have control over it. It is interesting to see that AO3 strongly states that this is a permanent decision, so the creator cannot choose to re-associate with this work anymore. It does say that the work will be maintained by the archive, yet the problem still exists: does it now means that that particular work in orphan_account's copyright belongs to AO3 or does it become open for free use among the public?

There is also another problematic aspect in AO3 that makes the users extra vulnerable, which is that there is always a running risk that AO3 will shut down one day. It is no guarantee that AO3 will be active forever. What if AO3 does close down one day, who will be responsible for all the fanworks? Will the creators and the users be able to retrieve their works and accounts? Those are all the uncertain factors that AO3 does not put into their statement clearly. Therefore, at first glance, it looks like the users are in control of a lot of aspects in AO3, but in fact, they are powerless in a lot of situations that are solely controlled by the archive.

Conclusion

At first glance, AO3 seems to be a digital archive that is controlled by the users, since they have the freedom to upload any kinds of fanworks without fear of being banned or deleted. It also requires no fee to access AO3 and there are no advertisements on the website. With those reasons in mind, the users often overlook the fact that they are actually being controlled by AO3 and are not as free as they believe. Without clear background information on OTW, the organization that is in charge of AO3, the users have a hard time trusting the organization and cause them to question the archive's accountability and transparency. AO3 also lacks any appraisal processes, so the problems such as tagging and representative of the records' value arise; last but not least, the copyright issue is also a major problem in AO3.

Even though there are a lot of problems that come up as the paper explore AO3 further, that does not mean it is a website that people should avoid using. In fact, it is one of the more user-friendly sites for fanworks creators and readers. The purpose of this paper is to raise awareness that there are a lot of complications behind the archive, and as a matter of fact, digital archives as a whole. To understand deeper about the problems, the users will be able to know how to protect their rights more. There are still a lot of unresolved problems regarding AO3, yet from the current condition, the digital archive seems to still be running strong, attracting thousands of visitors from around the world to browse this website daily.

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ELECTIVE 2

Course: IS 279 User-Experience Design
Project Title: Museo Egizio UX Project

In this project, my group and I design an app prototype for Museo Egizio in Italy. We compare and contrast different museum apps around the world and utilize different UX tools to conclude what are the easiest ways to present the content to the users, which tightly relates to my portfolio topic in regard to accessibility and discoverability.

Museo Egizio
UX Project

Alex Gernes, Doroty Sanussi, Hannah Wren, Jennie Lee, Josefina Madrigal, Kai-Ting Chan, Tanya Knipprath, Xinwen Zhang, Yatziry Ortiz

User Research

- In person interviews and online surveys
- Wide range of age groups, all users own a smart device and have visited a museum before
- Top Reasons for Returning to a museum, include, interesting exhibits, environment, and fair price

User Research

- Reasons for a great visitor experience include exciting content and interaction, navigation, and clear logistical info
- Top Museum Frustrations include poor navigation and no interaction
- Top user app requests were maps and logistical info

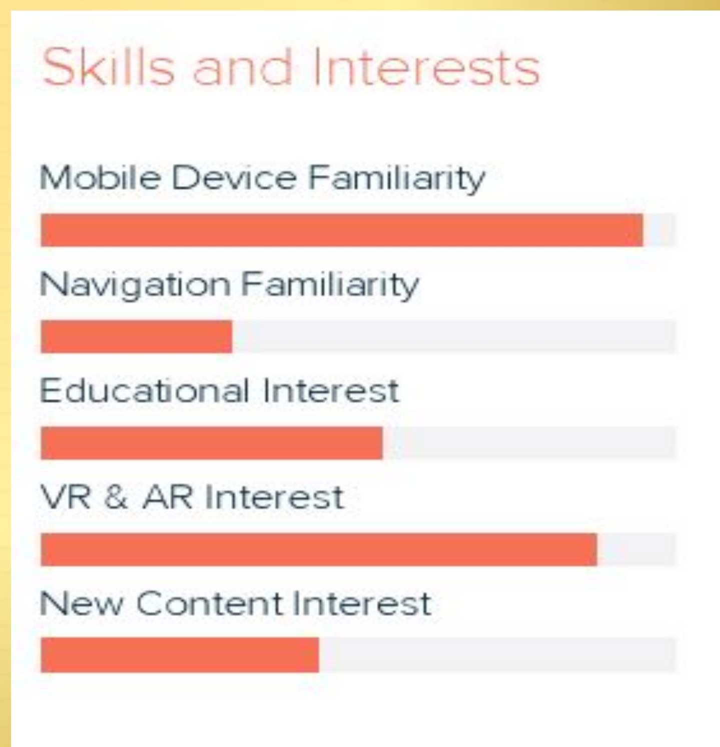
User Research Recommendations

- AR experience with the museum materials
- Different walk paths by theme, age group, and object focus
- Maps of museum building with recommendations for the physically impaired
- Crossword games
- Scavenger hunt
- Ticket discount reward system

Marco & Rosa

- 7 Years Old
- First-Time Visitor
- Interested in Games and Fun Activities

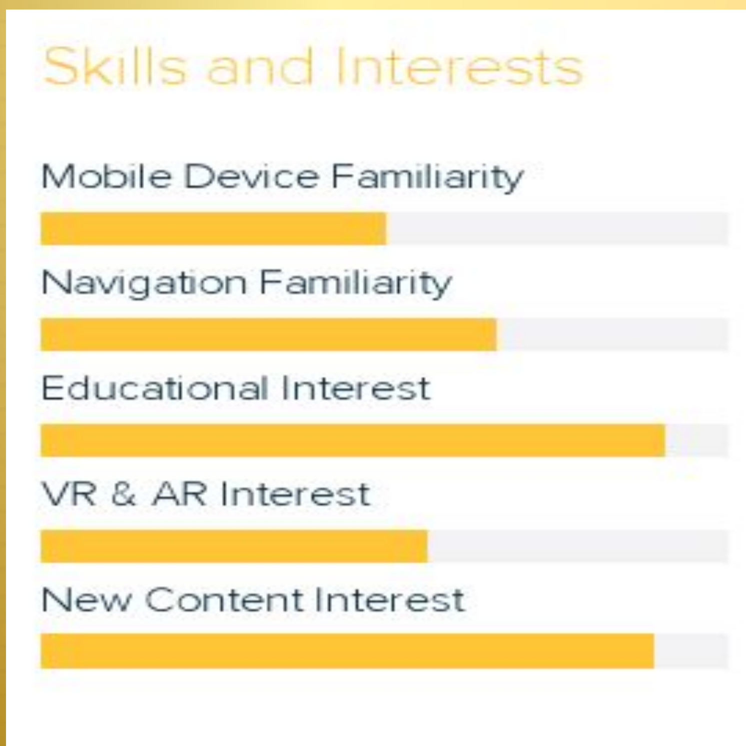
- 18 Years Old
- Non-Frequent Visitor
- Interested in Social Opportunities

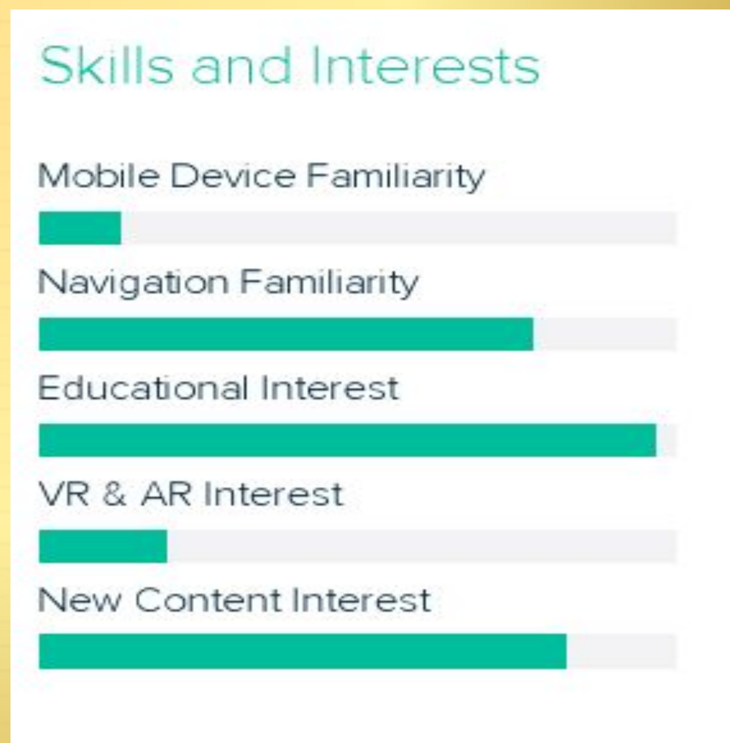


Kalila & Abdul

- 41 Years Old
- Semi-Frequent Visitor
- Interested in New Tour Routes

- 68 Years Old
- Frequent Visitor
- Interested in New Events / Accessibility





Comparative Review

A total of 10 different mobile apps from museums around the world were analyzed for their layout, design and content:

- **Museum of Modern Art** in New York City, USA
- **The Louvre** in Paris, France
- **Uffizi Gallery** in Florence, Italy
- **Rijksmuseum** in Amsterdam, Netherlands
- **The Getty Center** in Los Angeles, USA
- **The Metropolitan Museum of Art** in New York City, USA
- **National Palace Museum** in Taipei, Taiwan
- **National Gallery** in London, United Kingdom
- **Natural History Museum** in Los Angeles, USA
- **Guggenheim** in New York City, USA

Comparative Review

Overall Strengths

- Digitization
- Modern Design
- Social Media Integration
- Museum-Centered Features
- Quality Content
- Language Support

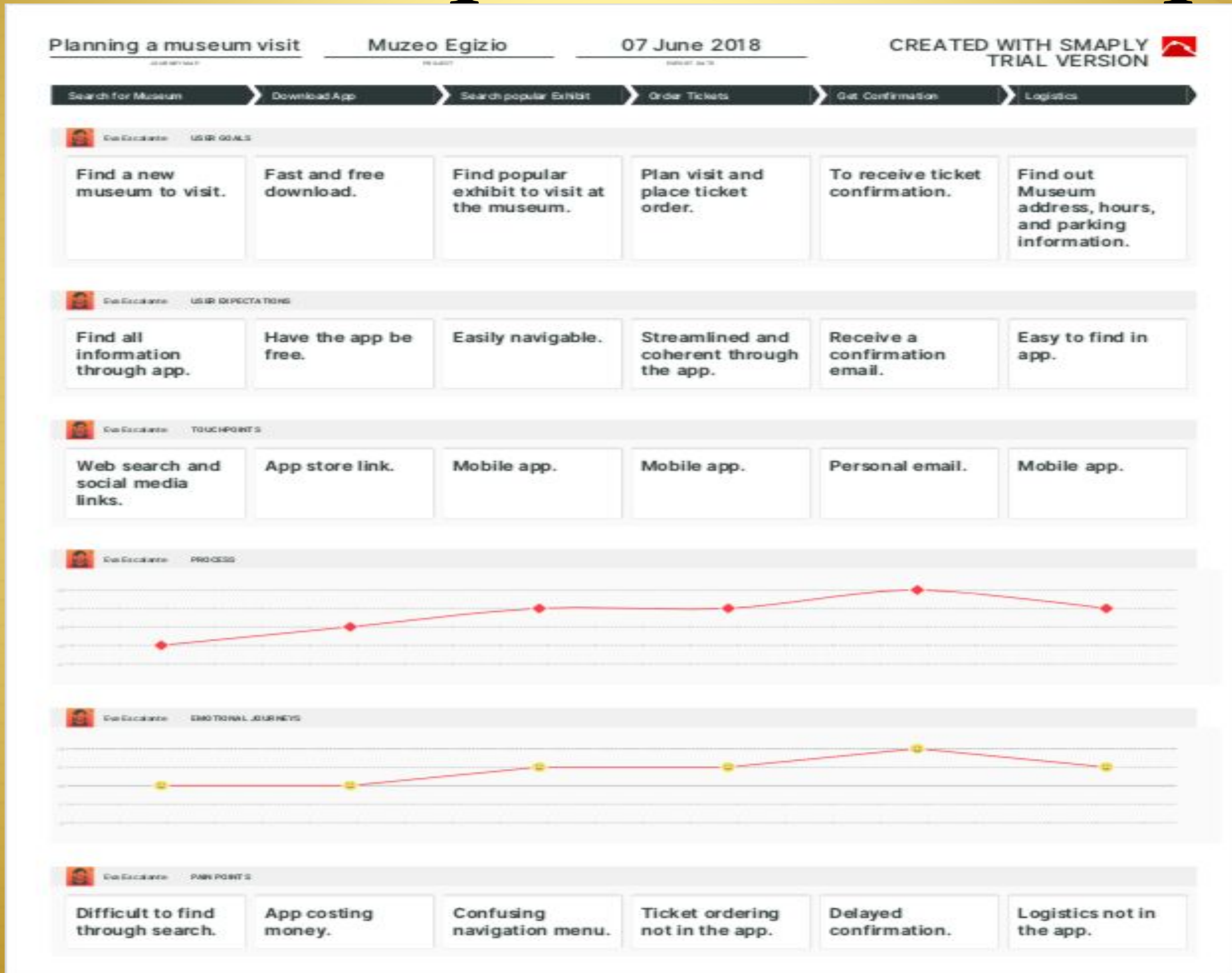
Overall Weaknesses

- Broken Links or Buggy Features
- Text-Heavy
- Lack of Clear Visual Distinction
- iOS Only
- Cost
- Accessibility
- App Size

Broader Discoveries

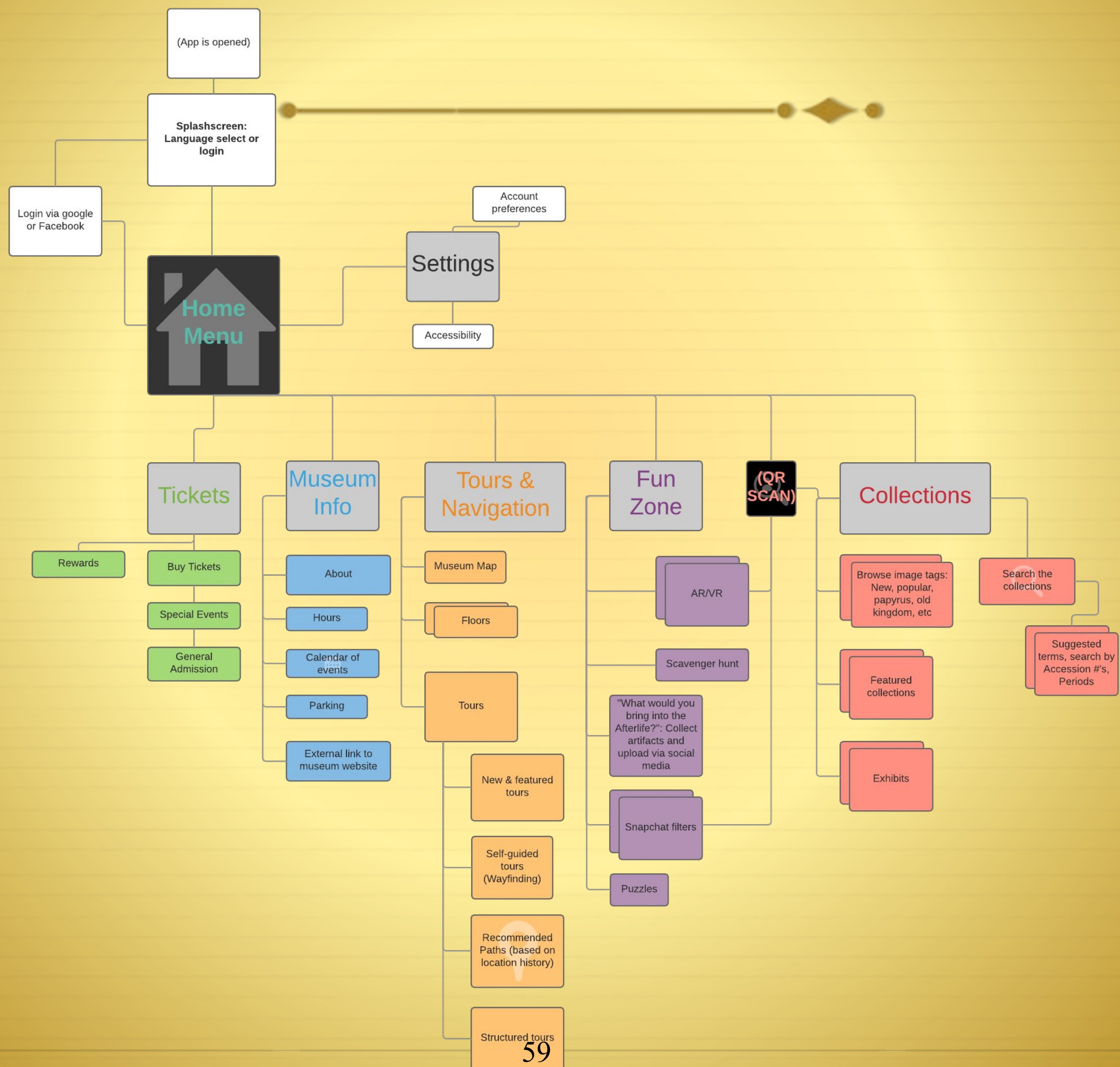
- Guided Tours
- Maps
- Staying Connected
- Essential Information
- App-exclusive Benefits
- User Accounts

User Experience Map



Information Architecture

MUSEO EGIZIO APP INFORMATION ARCHITECTURE TANYA KNIPPRATH | June 7, 2018



Design Principles

<u>PRACTICAL</u>

- Effectively fulfills essential functions
- FLEXIBLE structure

<u>INTUITIVE</u>

- Easy to use, simple, natural
- UNIVERSAL SYMBOLS / ICONS

<u>ENGAGING</u>

- INTERACT with museum collections
- Fun, happy experience
- Repeated interactions and visits

Design Features

- tickets
- tours and navigation
- fun zone
- museum info
- collections
- settings

Additional Recommendations

- **Museo Egizio Website**
  - Link to website instead of synchronizing content
  - Avoids mess with updating
  - Caters to different audience than app
    - Website caters to international
    - App caters to local visitors
- **Social opportunities**
  - Social media integration
  - Seasonal meet and greet: “Affogato x Egizio”
- **Information collection**
  - Offer range of broad categories (eg. age, location, etc.)
  - User chooses preference, not identification of individual info
  - Customize content according to user initiative
  - Surveys: ask general feedback
  - Geospatial notifications

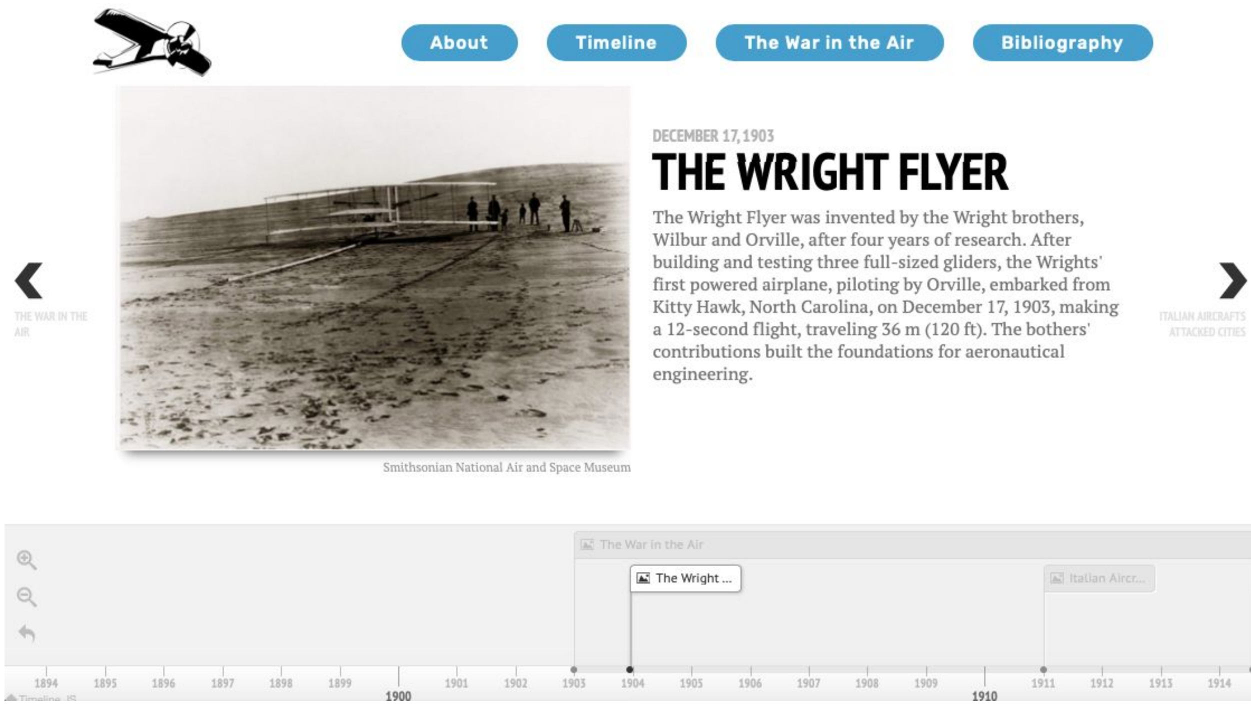
ELECTIVE 3

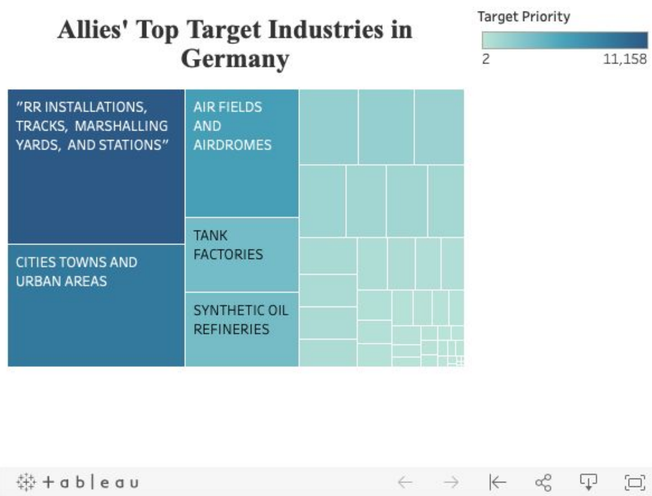
Course: DH 201 Digital Humanities
Project Title: The War in the Air

In this project, I utilize “Aerial Bombing Operations in World War II- Target, aircraft used, and bombs deployed for every mission in WWII” dataset from the United States Air Force to explain the origin of strategic bombing, its key figures, and the changes of Allies’ tactics and aircraft throughout the period. I choose this project because its aim is to turn data into visualizations, such as maps and graphs to make the information more accessible and engaging for the users.

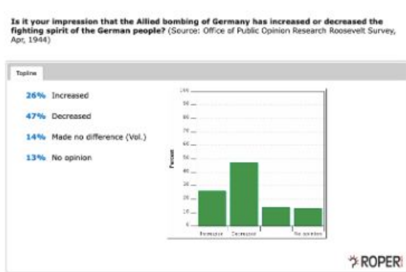
The War in the Air

The following are the screenshots of my project, to view the complete website, visit: https://kaitingc12.github.io/DH/





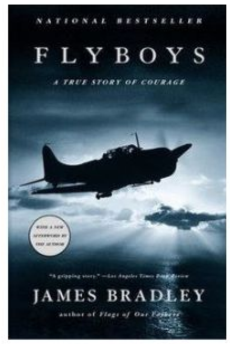
About Timeline The War in the Air Bibliography

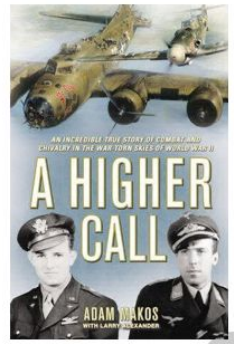


However, does the morale bombing really increase the speed of Germany's surrender, since it causes horror among the people? In a poll conducts in 1944, Office of Public Opinion Research ask the Americans "Is it your impression that the Allied bombing of Germany has increased or decreased the fighting spirit of the German people?" 47% response decrease, while 26% response increase. Surprisingly, German people's reactions might be different than what the Allies imagine. Since 1940, the Allies are already thinking of ways to decrease Germany's morale; they hope the destructions on economy and security will prompt the people to push back against the Nazi regime. Although there are indeed some resistances, the people find that they can only rely on the Nazi regime for safety and resources during and after the bombings of the cities, therefore in general, morale bombing does not actually turn the people against the Nazi regime, in a way, it actually strengthens it. The civilians begin to form a tighter bond with each other, and take in friends and family members who lose their homes during the raids (Did the Allied Bombing Increase Germans Fighting Spirit?).

About | Timeline | The War in the Air | Bibliography

If the content of this website intrigues you, you might also be interested to learn more through these movie and book recommendations.





CORE PAPER

Course: IS 212 Values & Communities
Title: The Silent Communities

This paper argues that without addressing the middle area between the extreme ends of communities, it is hard to see the complete picture of how communities operate in society. The paper helps me examine different perspectives and how to include a variety of voices, which is important when trying to design a well-rounded user-friendly platforms.

The Silent Communities

In this diverse society, people gather together to form a variety of communities. They may be bound by similar locations, values, professions, cultures, or perhaps, more than one of those elements combined. Naturally, some communities are more powerful than the others; this may due to the fact that they have better access to resources and advantages on locations. Various scholars have identified the inequality between communities and try to come up with solutions. Nevertheless, a lot of their essays tend to generalize communities into two simple types: the one with power (either more resourceful or situates in a better location) and the one without. They fail to address the fact that communities are constructed under very complicated situations, and there will be plenty of communities in-between that do not fit into the two simple categories; they are combinations of different characteristics that cannot be generalized and define as powerful or powerless.

This paper argues that without addressing the middle area between the extreme ends of communities, it is hard to see the complete picture of how communities operate in the society. First of all, to divide the communities up simply by one element will never unveil thoroughly the cause of conflicts among different communities. Secondly, different communities will have different definitions on how to present themselves and what elements are deemed as powerful or not. Thirdly, generalizing the communities will dismiss the voices and efforts of what traditionally viewed as less powerful communities, which also try to raise awareness, even though it is not as visible to others. Last but not least, generalization also means to ignore the internal struggles and power structures within each community. This will put the already less powerful group of people in the same community in an even more disadvantaged position. These kinds of problems occur not only externally between communities but also internally within communities if one simply divides them into two types. Without addressing the bigger issues, one will never be able to fill in the gap in order to achieve true equality across different communities.

To explore this topic further, this paper will analyze essays and articles such as Jessica Seddon Wallack and Ramesh Srinivasan's "Local-Global: Reconciling Mismatched Ontologies in Development Information Systems", Faye Ginsberg's "Rethinking the Digital Age", Michael

J. Thompson's review on David Harvey's book *A Brief History of Neoliberalism*, Sarah T. Roberts' "Social Media's Silent Filter", and Katie Shilton and Ramesh Srinivasan's "Participatory Appraisal and Arrangement for Multicultural Archival Collections". All of them have very detailed arguments on what consists of powerful or powerless communities, and how the discrepancies make them in conflict with each other. However, their arguments or the examples they give all generalize the communities and divide them up into two types, thus fail to address the grey areas in between.

Besides the counterexamples above, this paper will also give examples from essays and articles that do support the notion that it is not enough to divide the communities into two types. These include Ginsburg's arguments against the example she gives in "Rethinking the Digital Age", Srinivasan's critiques on Paulo Freire's theory in his essay "Where Information Society and Community Voice Intersect", James P. Spradley's "The Ethnographic Interview", and Achille Mbembe's "The Digital Age Erases the Divide Between Humans and Objects". All four of them address the multiple sides of the communities and do not generalize, thus present a more well-rounded picture of the true nature of communities.

The reoccurring example this paper is going to use to counter and illustrate the arguments in the essays and articles is the fandom community. Fandom, as defined by the Oxford Dictionaries: "The fans of a particular person, team, fictional series, etc. regarded collectively as a community or subculture" (Oxford Dictionaries). Fandom's structure is loose and often mystical, since it is not strictly bound by locations, professions, values, or resources. It demonstrates that it is not enough to simply categorize communities into two types, but consider the possibilities in between, since communities' structures are complex and have multiple layers. To make the examples more concrete, this paper will use one of the popular fandoms, *Merlin*, a BBC fantasy TV show, which runs from 2008 to 2012, and *The Man From U.N.C.L.E.*, a 60s spy show.

Communities are often being divided into two opposite types in a lot of research papers. The danger of this approach is that dismissing the middle ground will simplify the whole situation, and thus overlook a lot of important factors that cause mismatches between communities. To simplify the situation might allow easier understandings for the readers, but it is not enough to get the essence of the dynamics between communities. In Wallack and Srinivasan's essay

“Local-Global: Reconciling Mismatched Ontologies in Development Information Systems”, they divide the communities up into two types: local and state communities. They believe that the different ontologies in which these two communities employed is the key to their mismatches, and the reason for different ontologies is because of their different locations. However, to simply group the communities into two types, it might be able to solve the bigger issue at first glance, but fail to consider the communities that do not lie within these two types will never be able to solve the conflicts between the communities.

The example Wallack and Srinivasan use is the “waterlogging” problem that occurs in Karnataka, India. The local community refers to Karnataka, and the authors define the state community as “subnational, national, and international governing institutions” (Wallack and Srinivasan 1). They conclude that it is because of how local and state have different ontologies, even though both of them want to solve the same problem, they only create mismatches. It may make sense to group the communities into two types based on their locations, since this seems to be the major difference. However, to do this is to ignore other factors that build up the communities, such as resources, communications or other elements that might cause the mismatches. Therefore, this approach is not enough to completely solve the mismatches due to the fact that other important elements in communities do not being taken into considerations.

Fandom community is a suitable example to show that communities cannot simply be divided into local or state. To understand more about fandom, one needs to consider elements more than locations. It is impossible to divide fandom up based on locations, since fandom, via mostly on social media, consists of people who live in metropolitan, rural areas, and all around the world. To categorize fandom based on locations, it undeniably puts too much attention on the locations and overlooks how fandom’s contributions consist of a broad range of people around the world. In the *Merlin* fandom, the fans come from different states, different countries, and different continents. The social media and websites that build up the *Merlin* fandom are impossible to be placed in either state or local as categorized in Wallack and Srinivasan’s the essay.

Some may argue that the waterlogging example is quite different than the fandom that relies heavily on the Internet and social media for its formation. However, since the impacts of the Internet does not restrain to fandom, it also has huge effects on everything else. Therefore, due to technology, the information spreads out fast and wild, the line between local and state is not so clear-cut like the pre-Internet era. The boundary between locations becomes blurry. If one becomes fixated by looking for differences only through locations, that will fail to address the communities in the middle and cause the people to forget what are the other elements that influence the power dynamics in the society, thus will not be able to identify the bigger issues that cause the mismatches between communities.

Besides it is problematic to divide communities up into local and state, the internal elements that consist within these communities are not so subtle that they belong to only one specific type: "Communities may in fact form and self-define around shared ontologies, constructed and reconstructed fluidly through shared social and cultural activities and the ever-changing lived experiences of their members" (Wallack and Srinivasan 1). As the essay argues, communities are formed by ever-changing elements that are not easy to define and categorize. While if this is true, it seems even more impossible to simply divide communities up based on their locations. They should be constantly changing and not be bound by any single one of the elements. Even though to divide up communities into local and state is easier to illustrate the waterlogging example in India, it fails to consider that there are so many characteristics within a community that cannot be generalized into broader categories.

Achille Mbembe, in his article, "The Digital Age Erases the Divide Between Humans and Objects", acknowledges that none of the characteristics are static, no matter whether it is object or personhood: "Personhood was therefore not a matter of ontology, it's multiplicity of vital beings" (Mbembe). Therefore, it is simply not enough to categorize communities into two categories, by doing so, the action ignores the ever-changing elements that build up the community. Without considering other types of elements, the conclusion will be faulty and inaccurate, because it only focuses on one part.

Reflect on the previous definition of the elements consist of a community, fandom is an appropriate example to illustrate that the elements that consist it are ever-changing and fluidly reflect on the social activities around it. Even though fandom's history can be traced back to the analog era, it becomes better known when the Internet begins to become popular. It brings people from all over the places together and it changes rapidly, since the active level of fandom depends on a lot of outside elements. If there are new activities emerge, they may awake the long-dormant old fandom, or a fandom might get fewer activities after the show ends. For example, if there are new movies about Merlin, the Arthurian Legend in general, or the main actors in the show have new films coming up, the *Merlin* fandom will become more active again through the sharing of videos and photos via social media. Thus, fandom, like all the moving and breathing communities, cannot be simply categorized into two, since internally, the elements are already not stable, but ever-changing according to the activities of the society.

To simplified and categorize the communities into two types, local and state, is not a good way to look at the society as a whole. It might be an easy and efficient way if the problems mainly caused by different locations. However, this method ignores a lot of elements that shape the communities and the society. First of all, it is not enough to categorize the communities into local and state; this action ignores a lot of factors that exist in the middle of these two types of communities. Second, it is almost impossible to even categorize communities based on locations, since the elements that consist of those communities are changing and fluid as the fandom example illustrates. It might be easier to show the problems by dividing up the communities, but one must remember the danger of generalizing and remember to view the bigger picture or else will fail to see the core problems.

Besides categorizing communities into local and state, which ignores the fact that there are other communities that cannot be categorized into them, divide the communities up into one with resources and one without is also insufficient. The term "Digital Divide" becomes popular through the arrival of the digital age. It describes the unequal access to resources and technology across the globe (Ginsburg). Scholars often use this term to describe the situation in which some communities have less power than the others, and they seek to solve this situation by giving those less powerful communities more resources and believe that it will solve the problem of inequality.

In Ginsburg's essay "Rethinking the Digital Age", she discusses the debate rises after the United Nation proposes a funding program called "Digital Solidarity Fund" that aims to promote equal access and include the previous being excluded people into the field of technology (Ginsburg 1). Although the intention of this program is positive, it simplifies the complex situation into splitting the communities up into two types: the one which has access to technology and the one without. Therefore, they conclude that, as long as those underprivileged communities have the same resources, the inequality between the communities will disappear. This is a dangerous approach, since it is impossible to know how much resources are enough to achieve equality. By simply divide up the communities, the program overlooks the fact that communities are complex beings, there are so many communities across, thus, it is impossible to divide them up according to their resources.

Doubtful of the simple approach on how the United Nation believes this program will solve inequality between communities by simply distributing more resources to the less powerful communities, Ginsburg, as well as other critics share their concerns:

> Even as it wants to call well-intentioned concern to such inequities,
> the term nonetheless invokes neo-developmentalist language that
> assumes less privileged cultural enclaves with little or no access
> to digital resources- from the South Bronx to the global South-
> are simply waiting, endlessly, to catch up to the privileged West. (5)

Indeed, it is not a simple answer as if this community does not have this type of resource, giving them will automatically make them become equal to the other powerful communities. This method fails to consider the middle area, where communities are not so easily been seen as resourceful or not. The elements of communities are intertwined and complicated. By dividing the communities up into two simple types, it is impossible to achieve equality, because it disregards the other elements that come into play.

James P. Spradley's book *The Ethnographic Interview* provides a good counterexample that illustrates how it is not enough to simply divide the communities into two types based on resources. It is common for one to determine what others need according to one's own point of view, but that is not necessarily accurate, since this might not be what they really need, but what others think they need. After years of fieldworks, Spradley understands that it is not enough to simply write down what other groups say, but to note down the precise languages the groups use.

To do this is to preserve the essence of the particular group and avoid over-generalizing. Therefore, it is not enough to simply give more resources to the communities that are traditionally thought as lacking, rather, it is important to understand each of their individualities in order to properly understand and collaborate with them.

Fandom community is one of the many examples that shows communities cannot be simply divided up into one with resources and the one without. Fandom's resources vary, but from a technological standpoint, no matter whether it is a big fandom with a lot of people in it or a small fandom consists of only a few, they have equal resources as long as the members have Internet connections. Even for members with limited Internet connections, they are still able to connect with other members in the fandom, due to physical fanarts or flyers call for members to meet in real life. For example, there are congregations around the world for the *Merlin* fandom, where fans can meet physically and discuss their obsessions. Therefore, fandom community cannot be put in either side. It does not categorize as resourceful, but it is definitely not without resources.

Externally, communities cannot be divided up into two types; it is the same internally within a community. For the United Nation program, they assume that more resources mean more power, and that will be able to achieve equality among communities as long as they distribute the resources equally. They do not consider community's individuality, that each community may have different definitions for resources and how they utilize them will cause different results.

In regard to the program, some within the community believe that the opportunity to access to more resources will indeed empower the communities as Tuscarora artist, scholar Jolene Rickard expresses: "That time has come… There is no doubt that First Nation People are wired and ready to surf and chat. It seems like a distant memory when the tone of discussion about computers, interactivity, and aboriginal people was filled with Prophetic caution" (Ginsburg 1-2). However, others are not so certain. Some question who is in charge of these resources and who has the rights to the knowledge. Regional manager of the Outback Digital Network, Alopi Latukefu questions: "The issue that needs to be raised before any questions of indigenous usage of the Internet is: whose information infrastructure or "info-structure" determines what is valued in an economy- whether in the local community or the greater global community which they are limited to?" (Ginsburg 2) There are yet another that thinks that open up to the resources given by others will eventually make them economical and lose their original self (Ginsburg 2). Every community has its own definitions and thoughts on the resources. Therefore, it is impossible to even determine the impacts resources have within a community. It does not act as an empowerment to the communities if the approach does not even consider the individualities within each community.

Similar to the above communities, fandom community cannot simply be defined as resourceful or not resourceful. First of all, the definition of resource in the fandom is unclear. Is it according to the number of fans? This might be the preferable way to say that this fandom has more resources, since more members mean more productions in regard to fan-related materials. However, fewer people in a fandom does not mean the fandom is not resourceful, in opposite, they might have other alternate ways to make up for this. For example, compared to the *Merlin* fandom, *The Man From U.N.C.L.E.* fandom is much smaller, due to its age. Even though it has fewer fanfictions and fanarts, the members in the fandom are much closer than other larger fandoms. Resourceful or not, this is a broad term to determine and define a fandom community; it fails to recognize the individuality and uniqueness of each community.

Therefore, it is obvious to see that it is not enough to categorize communities into two simple categories: the one with resources and the one without. Externally, it is impossible to divide communities up by only looking at their resources; internally, the definitions of resources are different within each community. To generalize and overlook the fact the resources have different meanings in each community, it fails to allow them to present themselves in the way they desire, but view them through only one bias lens. It is not enough to imagine what the other communities need, because that often ends up the opposite of what the program creators want to achieve initially, as Ginsburg argues: “Rather than imagining that we know the answers, clearly, we need to keep listening to the large percentage of the earth’s population that is on the unwired side of the so-called digital divide (9).

It is natural to think that with resources come influences. A community with more resources will be more influential than the others. Even though this may be true, to only consider this factor and ignore the other elements in the communities will only end up with a generalized and unfair conclusion. In Thompson’s review of David Harvey’s book *A Brief History of*

Neoliberalism, Harvey voices his concern regarding "region inequality". He states that coastal cities are often richer than inland due to the advantage of locations and resources, with that it comes more influences. Although this is a reasonable assumption, the fact that he divides up communities into two types: coastal and inland, is inadequate. This assumption assumes that in the world, there are only two types of societies, but he forgets to mention the roles of the communities that are in-between coastal cities and inland. By excluding them, he disregards the influences the in-between communities have towards both the coastal cities and inland. Without considering them, it is hard to see the complete picture of how coastal cities and inland really work.

Like the clear division of coastal cities and inland in David Harvey's book, Sarah T. Roberts' article "Social Media Filter" also only looks at communities' influential degree by dividing them up into two types: the commercial content moderations (CCM) workers and the team above them. Although this is a valid assumption that the higher up the people are in the companies, the more influences they have. However, the problem here is that the article disregards that these are not the only parts of the companies that have influences. By dividing them up, the article assumes that the team above the CCM workers has influences and the CCM workers do not; it ignores the fact that the power structures in companies are not so clear-cut. Who has power and who has not is not clear, rather, it is intertwined in companies. Moreover, the article states that the operation within the company is not transparent, therefore, it is even harder to divide up into groups and state clearly that one has more influences over the other.

Fandom community is a good way to illustrate that both the above articles forget to address the communities in the middle that are not exactly influential but also are not completely without influences. At first glance, fandom seems to have no influences towards the entertainment industry whatsoever, since it is just a community form by people who have the same interest in certain movies or books. However, fandom actually has influences over the industry, though it might not be visible at the first glance. As the entertainment industry tries to level up their revenues, they will start searching for what their viewers like, so fandom provides a very good way for them to understand what the viewers want most. Though this might not be completely effective, fandom creates arts, videos, and some also write emails and letters to the companies to express their thoughts on certain programs. None of this seems very visible from the outside, but fandom does have certain influences towards the industry. Therefore, to only divide the communities up into two types, it fails to see that a community can have influences in a lot of ways. It is not always so clear-cut, and it certainly misses a lot of elements if one simply divides communities up into one with influences and one without.

To categorize communities into one with influence and one without, not only fails to consider the big picture of how the in-between communities work, but also generalize the community as a whole, which assumes that it has equal influences internally. The problem is that even within a community, there are bound to have members that have more influences over others. Fail to address this part will result in not seeing the complete picture of a community, and dismiss the smaller voices within it. In the case of the CCM workers, even though they generally have less power than the team above them, to say that all the CCM workers have the same influences are not accurate. In the article when Roberts interviews one of the workers to better understand his working conditions, this worker undeniably has more power compared to his colleagues. Since his words will be carried out in a magazine allowing the public to know more about the CCM workers' situations. In this case, it is inappropriate to say that all the people in a group have equal influences, because this will ignore the influences and efforts individuals have within a community, and overlook the fact that within it, not all of the members are the same.

Fandom illustrates this example of unequal influences within a community perfectly. In a fandom, not all the members have equal influences. Some of them undeniably have louder voices than the others. One of the popular elements in a fandom is "the ship", where fans pair two or more characters together. In the usual case, there will be more than one ship per show, though one will be predominant and more popular. In this case, it will have more influences over the others, and perhaps influences the industry into noticing what the majority of the audience wants to see. For example, in *The Man From U.N.C.L.E.* fandom, the Russian spy, Illya Kuryakin, initially only has a small role, but he becomes very popular after his first appearance; the audience wants to see more of him and his interactions with the main character, the American spy, Napoleon Solo. There are other pairings within the fandom which pair the two main characters with other spies, but they are generally less popular. Therefore, internally, there are bound to be members that have more influences than the others within the same community. To dismiss this means that it ignores the internal differences within a community and generalize them as the same thing.

To categorize the communities into one with influences and one without is not enough. The communities within the middle play a big role in the dynamic between the influential communities and the less influential communities. If one simply dismisses them, one will miss the big picture and fail to consider how the middle communities come into play to influence the other communities and come up with inaccurate conclusions. It will also dismiss the effort that less influential communities put in to try to raise awareness, though it might be small or less visible, that does not mean it does not exist. Moreover, to divide the communities up also means that one generalizes the communities. There are also different levels of influences within a community, without addressing them, one overlooks that all the communities are unique.

Not only does dividing the communities up only according to their influences will oppress the less powerful voices within a community, to divide the communities up through their positions will also cause the same problem. The position here refers to the hierarchy of power. In Srinivasan's essay "Where Information Society and Community Voice Intersect", he analyses Paulo Freire's theory of pedagogy. Freire believes that in a lot of processes, in this case, the relationship between the teacher and the student, is divided into the oppressor-oppressed. He believes that: "Freedom entails rejecting the image of the oppressor and instead embracing the autonomy and collective responsibility common to all human beings" (356). To apply this to the communities means that there is a very clear-cut division between which communities belong to the oppressors and which belong to the oppressed. However, like the argument in the previous paragraph, there is no one definition to define everything and generalize them will only overlook the individuality within a community.

Fandom community is a good example to show that it is impossible to divide the communities into two types: the oppressor and the oppressed. Nothing is so clear-cut, everything can be interpreted in multiple ways. For example, in 2015, Hollywood adapts *The Man From U.N.C.L.E.* into a movie. Therefore, there are now a fandom for the movie and a fandom for the TV show. Although it might seem that the movie fandom is the oppressor since it is newer and has more members, the two fandoms actually have some interactions and a lot of fans begin to watch the TV show because of the movie. To generalize the communities into two types will not only miss a lot of elements that are in-between, but simplified the situations into believing false assumptions.

Externally, it is impossible to divide the communities up into the oppressor and the oppressed, so as internally. Srinivasan argues that Freire fails to take into considerations of the complex situations in-between: "His [Freire] concepts fall into the traditional Hegelian dialectic that lacks investigation into the multiple layers of meaning that generate the communities of oppressors and oppressed" (356). This paper will go further into argue that besides the investigations between the oppressors and the oppressed, it is also important to examine the complex construction within a single community. To view one community and labels it as either the oppressor or the oppressed generalize the communities and ignore the individuality within. This kind of method will further de-valued the smaller voices within the community because they are being viewed as the same as the other louder voices within the same community.

Fandom in itself is also a complex being. Even within the same fandom, members will have different ideologies for the same thing they all enjoy. For example, in the *Merlin* fandom, some regard the plot as simply the adventure of a powerful sorcerer in a kingdom that forbids magic. However, some others interpret the story as the struggles of the LGBTQ+ society in which people are being prosecuted for what they are born with. To simply ignore the different voices within the same community is to ignore the individuality within it. Generalization will not help the members that are already in the disadvantaged positions within the community to be heard.

Therefore, to divide the communities up into the oppressor and the oppressed is not enough. Externally, it overlooks the fact that there are multiple elements in between the oppressor and the oppressed that cannot be easily categorized. Fail to consider that means that it does not take the multiple elements into account and will likely come down to a false conclusion. Internally, it is crucial to consider even within the same community, there are elements within that are different. To not generalize and realize that there are multiple sides in a single community is to acknowledge the different voices within. With this in mind, it will diminish the degree of how the less powerful voices within the same community are being oppressed.

Besides dividing the communities up into the oppressor and the oppressed, scholars also often categorize communities into ones with the power to represent, and the ones without. In Shilton and Srinivasan's essay "Participatory Appraisal and Arrangement for Multicultural", they discuss how it is important to rearrange the archival collections to make it fairer. They want to give back power to the communities, so they can represent themselves rather than being represented: "A key component within this shift will be to expand appraisal, arrangement, and description into tools designed to respect the knowledge systems embedded within community contexts" (4). Even though the intention is clearly positive, the argument fails to recognize that there are a lot of different types of communities in-between and it is impossible to categorize them into having full power to represent and the others do not. Power is not something a community has it all or has none, it often depends on how people view things and how the society behaves.

Fandom community can illustrate that communities are not just the one with full power and the one without, they can represent a lot of things in-between. In various ways, the arts, posts, stories members in the fandom create can be considered as to have the power to represent. The ones they create might be adapted into something long term and whenever people talk about these specific aspects of fandom, the arts will be presented as a significant part of the fandom. However, a lot of times the creations from the members of the fandom will come and go, they might have some power at once, but it is not long term. Therefore, to conclude that a community represents complete power and the other has no power at all is insufficient and fails to recognize the middle ground.

To categorize communities into two types based on their powers also disregard the fact that communities have a lot of internal struggles. Within a community, there are a lot of differences. There are bound to be differences between communities, but also within them. Shilton and Srinivasan's essay emphasizes that the archivists should be alongside the community members to resist objectification, but actively empower the records (6). However, different communities will have different definitions of power and this kind of power does not necessarily apply to all of the members of the same community. Some members might still be more powerful than the others, and their words and actions do not necessarily mean they represent the whole group. Therefore, to categorize communities into one with power to represent and the other does not fail to realize that within a community, there are also power struggles within, and what majority of the members believe do not mean every single member in them agrees.

The power struggle within is perfectly illustrated by the fandom community. It might be reasonable to think that everyone will believe or like the same thing since they belong to the same fandom. However, the notorious "fandom war" in which members argue or even fight with each other on how they believe should be the correct way of how the stories should go and how the characters should behave. One side might eventually have the upper hand, however, like the previous example, that does not mean every single member believe in it. To categorize the communities into two types is to generalize and disregard the individuals within the communities.

To categorize the communities into two types, one with power to represent and the other without is not a fair and just decision. Although the intention might be good, since they want to give more power to the ones that they consider as underrepresented. But by using this method, they forget to consider the middle ground that there are a lot of communities that are not necessarily powerful or powerless. This kind of method also fails to address the internal struggles within a community and consider all the members as the same. They ignore the fact that within a community, there are also people who have more power to represent than the others within the same community. By generalizing, the argument in the article puts the less powerful members in the same community in an even more disadvantaged position.

In conclusion, this paper argues that the approach of a lot of essays and articles that simply divides the communities into two types both externally and internally is not sufficient. Fail to acknowledge the middle area will result in faulty conclusions, since it does not consider the bigger picture of how all the different communities function and interact with each other. If one wants to solve the conflicts between communities, to simply divide communities up based on locations, resources, influences, and power, is not a suitable method. The reason is that there are plenty of other factors that cause mismatches, if one fails to consider them, the conflict will not be thoroughly examined and resolved. To divide the communities into two types also means that one ignores the individualities within it and looks at it as a whole. This approach disregards the fact that terms in each community have different definitions and interpretations. It is not enough to use only one point of view to look through everything. To view community as a whole and ignore the internal struggles within, rather than notice that individuals within the same community might have different opinions will result in putting the less powerful voices within the same community in an even more disadvantaged position, because one thinks the louder voices in it represent every single member. Although to divide the communities into two types might be a clearer and easier way to look at a situation, it should never be the only way. To consider the complex structures and elements that build up communities might be time-consuming, but it is a much better way to thoroughly understand how the communities function and interact with each other.

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Fall Quarter 2017
IS 211 Artifacts & Cultures
IS 260 Description & Access
IS 431 Archives, Records, & Memory

Winter Quarter 2018
IS 270 Systems & Infrastructures
IS 272 Human/Computer Interaction
IS 480 Introduction to Media Archiving & Preservation

Spring Quarter 2018
IS 212 Values & Communities
IS 279 User Experience Design
IS 289 Digital Asset Management

Fall Quarter 2018
IS 240 Management Digital Records
IS 400 Professional Development & Portfolio Design
IS 432 Issues and Problems in Preservation of Heritage Materials
IS 498 Internship

Winter Quarter 2019
DH 201 Digital Humanities
IS 280 Social Science Research Methods
IS 438B Archival Description & Access

Spring Quarter 2019
AH 232 Contemporary Art
IS 262B Data Curation & Policy
IS 462 Subject Cataloging & Classification

Advising History

My advisor for the MLIS program is professor Shawn VanCour. We meet at least once every quarter to discuss current classes, class selections for the next coming quarter, and professional opportunities. Starting from my second year in the program, I go to his office hour more frequently to discuss the issue paper, the professional development statement, and the portfolio submission process. He reads through my papers and provides me with helpful feedback.

Professor Snowden Becker also offers me insightful suggestions in forming the argument for my issue paper topic. Initially, I struggle to put my ideas into a more coherent argument; she gives me examples and draws diagrams that really help me visualize my ideas. She also writes my letter of recommendation when I apply to the Getty Graduate Internship.

Professor Miriam Posner is another person that writes me the letter of recommendation for my Getty Graduate Internship application. She also provides helpful suggestions and links for my two projects in her IS 270 Systems & Infrastructures and DH 201 Digital Humanities courses.

Professor Leah Lievrouw provides me and my group with some helpful tips in understanding the concepts in her course IS 272 Human & Computer Interaction. She also gives me information on student groups and class suggestions when I express my interest in informatics.

Professor Ellen Pearlstein gives me helpful information when I express my interest in museum conservation. She provides some links for me that I can look up for conservation opportunities, and suggests that I can work with the conservator, Mr. Christian de Brer, at the Fowler Museum at UCLA. She also writes a recommendation letter for me when I start my internship in the Fowler.

Professor Todd Presner, the chair of the Digital Humanities program at UCLA, offers me a unique opportunity to work with him on his new book. With his help, I research and analyze the sketches discovered in 1947 buried under Auschwitz and annotate Holocaust survivors' interviews conducted by David P. Boder in 1946. He also allows me to list him as a reference when I apply to the Jack Voorzanger Archival Internship at the Museum of Tolerance.

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https://www.facebook.com/ATributetotheClassicMovies/?ref=aymt_homepage_panel

EDUCATION:

University of California, Los Angeles, CA — Expected Graduation in June 2019
Master in Library and Information Science
Relevant Coursework: Description & Access, Records, Archives & Memory, User Experience Design, Issues and Problems in Preservation of Heritage Materials, Digital Humanities

Boston University, Boston, MA — September 2013 - December 2016
B.S. in Film and Television GPA: 3.45/4.00

Boston University Study Abroad, Paris, France — June - August 2015
Paris Internship Program

EXPERIENCE:

The Fowler Museum, Los Angeles, CA — January 2019 - Present
Intern

- Catalog museum objects with Argus
- Write Condition and Treatment Reports using Photoshop, Bridge, and Word
- Create mounts if necessary

The Getty Conservation Institute, Los Angeles, CA — October - December 2018
Intern

- Identify new Library of Congress conservation-related subject headings to be added to the collection conspectus and vendor approval plan profiles
- Create bibliographies of GCI project specific literature for the project's archive
- Identify relevant Chinese literature from past GCI projects to be added to AATA Online

UCLA Alan D. Leve Center for Jewish Studies — April - December 2018
Graduate Assistant Researcher

- Research and analyze the sketches discovered in 1947 buried under Auschwitz
- Remodel Auschwitz's 3D map and compare it to the sketches
- Annotate Holocaust survivors' interviews conducted by David P. Boder in 1946

A Tribute to the Classic Movies, Facebook page. — July 2015 - Present

Reviewer and monitor

- Writes personal reviews on movies made before 1970s
- Fosters discussions with other community members and scholars on classic Hollywood and old movies

Wende Museum, Culver City, CA June - October 2018

Intern

- Catalog museum objects with Mimsy XG
- Rehouse various museum objects from photos to clothings
- Research and organize information for upcoming exhibitions

European Independent Film Festival, Paris, France June - August 2015

Intern

- Gather contact information globally, which results in establishing several partnerships, such as Eindhovens Film Festival and Bali International Film Festival
- Film promotion videos that encouraged individuals to submit their films
- Manage social media and blog pages to increase participations

National Palace Museum, Taipei, Taiwan June - August 2012

Volunteer

- Instructed visitors on directions and general information for the museum
- Monitored the interactive machines, which digitized rare books
- Presented brief history on the exhibition

SKILLS:

Foreign Languages: Chinese (Native), English (Professional), French (Conversational), Japanese (Elementary)

Computers: Microsoft Office Suite, Adobe Animate CC, Mimsy XG, Argus, AATA, GAIA, EndNote, Photoshop, Bridge, HML, HTML, JPEG

Accessibility Statement

While the internet becomes the more preferable way for people to access information than physical formats, there are still potential limitations that need to be considered when designing websites. For my digital portfolio, I put the principle of accessibility design into consideration, trying to make my portfolio as clear and intuitive as possible. I will also address the differences between my printable and digital versions, as well as choosing Github as my hosting website.

As I am interested in user-experience design, I try to keep my interfaces as clean as possible, only the necessary information will be presented on the pages, so the viewers will not be distracted. For my homepage, I present all the required elements for the compiling of my digital portfolio into clickable buttons in the middle, so the users do not need to second guess the locations of the information. As for other pages, to keep the text minimum, I collapse the required elements into a hamburger icon to avoid making the top bars too chaotic.

The main differences between my printable and digital versions are that the latter encompasses interactivities and is non-hierarchical. For one of my elective coursework in the digital humanities, I not only provide the link to my website, but also demonstrate how I turn the dataset into an interactive map that the viewers can experience directly on my digital portfolio. Moreover, unlike printable version that needs to constantly refer back to the table of contents, the digital portfolio provides a convenient way for the viewers to navigate to their desired content, no matter what pages they are on currently.

I choose Github as my hosting website because it is the world's largest development platform with more than 31M registered users and trusted by 1.8M businesses and organizations. That means the company is constantly improving its platforms and it is also supported by a large community of users. These elements ensure the future accessibility of my digital portfolio.