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# Data Visualization Tools for Archives and Special Collections

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# Archival Resources on the Web

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## Data Visualization Tools for Archives and Special Collections

By Kayla Harris, Librarian/Archivist, University of Dayton, and Andrew Harris, Digital Initiatives Librarian, Wright State University

As archivists, we often view ourselves as stewards of the collections, preserving materials for other researchers to use. We arrange, describe, and promote the items, but it's not always within our job descriptions to interpret the materials we work with or to create new knowledge. Yet data visualization, or any effort that helps users see data in a visual way, can be an easy and accessible way to promote collections. This article highlights data visualization tools archivists have begun to use to enhance their digital holdings. Each tool requires a different level of technical expertise, but many are user-friendly and offer a great opportunity for archivists and users to engage with collections in new ways.

### Tableau Public

Katherine Santa Ana used Tableau Public, <https://public.tableau.com/en-us/s>, to create different representations of the archival holdings of the Catholic University of America

Libraries. Tableau Public is a free software that allows anyone to create interactive data visualizations for the web by connecting to a spreadsheet or file after downloading the application. Although Tableau Public has slightly less functionality than the full Tableau Creator that requires a paid monthly subscription, it still has many options for the archivist to explore.

As Santa Ana states on the *Archivists' Nook* blog, "Most archives create detailed finding aids for their collections, which include important information such as the size of the collection, dates the collection encompasses, other related material, and much more."<sup>1</sup> Because all of the data are readily available, it's just a matter of turning it into something that might illuminate new patterns when viewed in a visual representation. Santa Ana created both a pie chart and a bubble chart as two representations of the manuscript collections by size. She also created a timeline



Screenshot of a bubble chart of the Manuscript Collections at the Catholic University of America generated in Tableau Public. Interact with the live chart at <https://public.tableau.com/profile/katie.santa.ana#!/vizhome/ManuscriptCollectionSizes-Bubbles/Dashboard2>.

showing the date range of selections from the manuscript collections. This is an enlightening way to see which collections overlap chronologically and to view the entire date span for the manuscript collections at the American Catholic Research History Center.

Tableau Public gives user profiles 100GB of space, and the visualizations can be shared via social media or embedded on a site or blog. The images can also be interactive when viewed within the Tableau Public gallery, <https://public.tableau.com/s/gallery>. Users can browse the gallery for inspiration and check out the Viz of the Day.

### **TimelineJS**

Another way to make dates come alive is by creating a timeline. Created by Northwestern University's Knight Lab, TimelineJS, <https://timeline.knightlab.com>, is a free, open source software that allows users to make interactive timelines enriched by a variety of media. Users follow a simple four-step process starting with a Google spreadsheet. The timeline software can pull in media from a variety of sources including YouTube, Vimeo, Google Maps, SoundCloud, and Digital Commons. Users that have experience with JSON (JavaScript Object Notation) can modify the software to better suit their needs.

Wright State University used TimelineJS to highlight some of the university's major achievements for its 50th anniversary and featured digitized items from the Wright State Special Collections and Archives. TimelineJS allows creators to embed a timeline in institutional websites and, because the data are in a Google spreadsheet, it is easy to make changes or additions. Wright State added its timeline, [https://corescholar.libraries.wright.edu/archives\\_wsu\\_historical\\_photos](https://corescholar.libraries.wright.edu/archives_wsu_historical_photos), to its institutional repository, CoreScholar, so users can browse the project and the accompanying media.

### **StorymapJS**

An excellent addition to the archivist's visual resources toolkit is StorymapJS, <https://storymap.knightlab.com>. Also created by Knight Lab, StorymapJS is similar to TimelineJS but focuses on telling a narrative and often is tied to locations. However, it also can be used to tell stories with very large images. The Knight Lab highlights the ability of StorymapJS to create slides that will display on maps, giving an example featuring different sites along the Green Line train route from Minneapolis to St. Paul.<sup>2</sup> StorymapJS can also be used with "pixel-dense" files or

"gigapixel" images. The site offers instructions on how users can create and upload these large files to a web server. This application would effectively let an archivist embed text and possibly other information within an extremely large image. This could have many potential uses in a special collections context.

StorymapJS would be particularly useful for creating a digital version of an in-person exhibit. A high-quality photo of an exhibit case could be uploaded, and information about each item in the case embedded as slides. Then users could click on the different items within the case and read accompanying information. StorymapJS includes an example using an image of the triptych painting *The Garden of Earthly Delights* by Dutch artist Hieronymus Bosch, <https://storymap.knightlab.com/examples/bosch-garden>. Users can click through in a linear fashion similar to the train example or view the painting in its entirety and see the pop-up bubbles where the curator has added insights.

### **Google Maps**

In addition to StorymapJS, Google Maps, <https://www.google.com/maps/about/mymaps>, is a free and familiar application that can be used to tell stories from archival collections based on location. While most readers are probably familiar with using Google Maps to get from point A to point B, it also has the functionality to create a custom map with plot points much like StorymapJS. However, it provides an ease of use similar products do not replicate. In Google Maps, anyone with a Gmail account can create maps for free and get access to layers and plot points, draw lines between those points, and customize symbols. Users can also bulk upload points of interest to the map using an Excel spreadsheet. They can create links that display within their custom maps to various resources to include images or other pertinent information within their maps. These maps can be accessed via a smartphone or tablet when traveling, so that visitors can follow a path traveled by a collection. Custom Google Maps can also be shared and embedded, giving archivists the flexibility to decide where and how they want to display their maps.

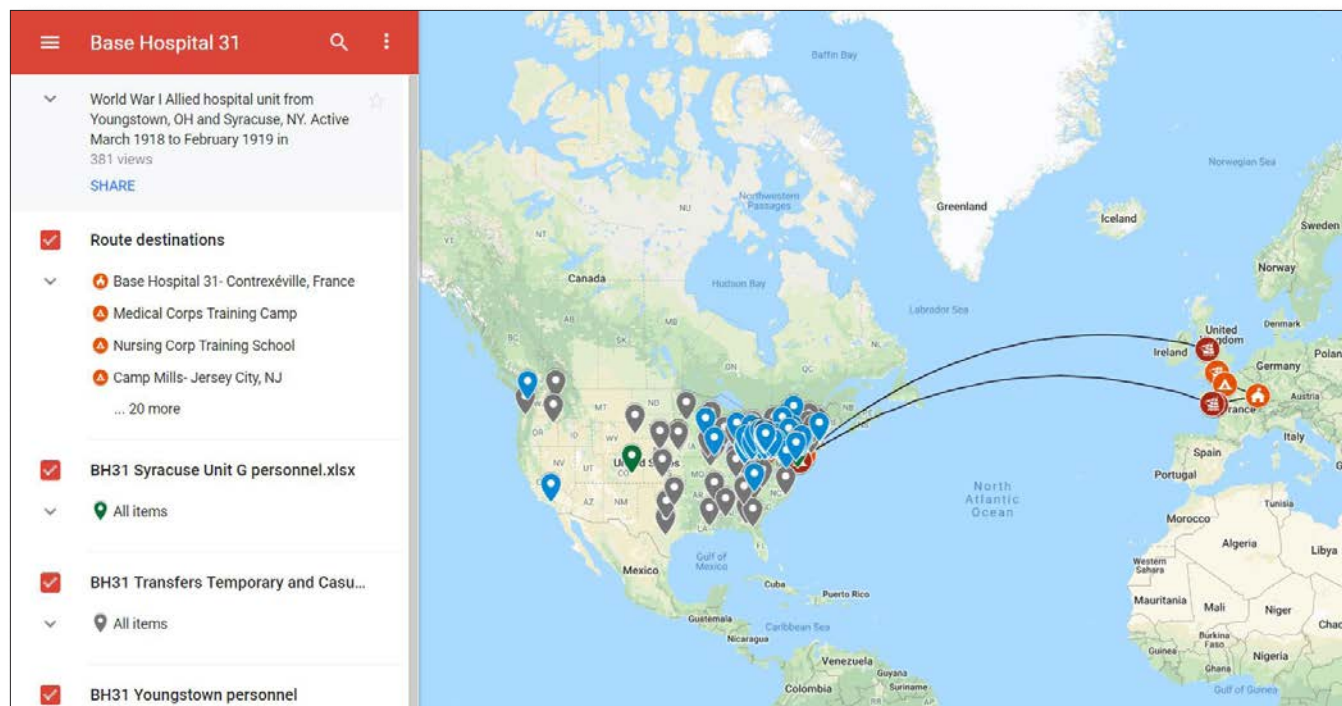
One example is the Youngstown State University Base Hospital 31 glass-slide digital collection, <https://digital.maag.ysu.edu:8443/xmlui/handle/1989/10306>. For the centennial anniversary of the Base Hospital 31 unit,

*(Continued on page 28)*

## ARCHIVAL RESOURCES ON THE WEB—Continued

Jolie Braun, Assistant Editor

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Screenshot of the Youngstown State University Base Hospital 31 in Google Maps. Interact with the map at <http://goo.gl/6wvPyz>.

Youngstown State University Archives and Melnick Medical Museum created a Google Map that included each member of the unit, their activities at BH 31, other pertinent metadata, and accompanying media such as photographs.

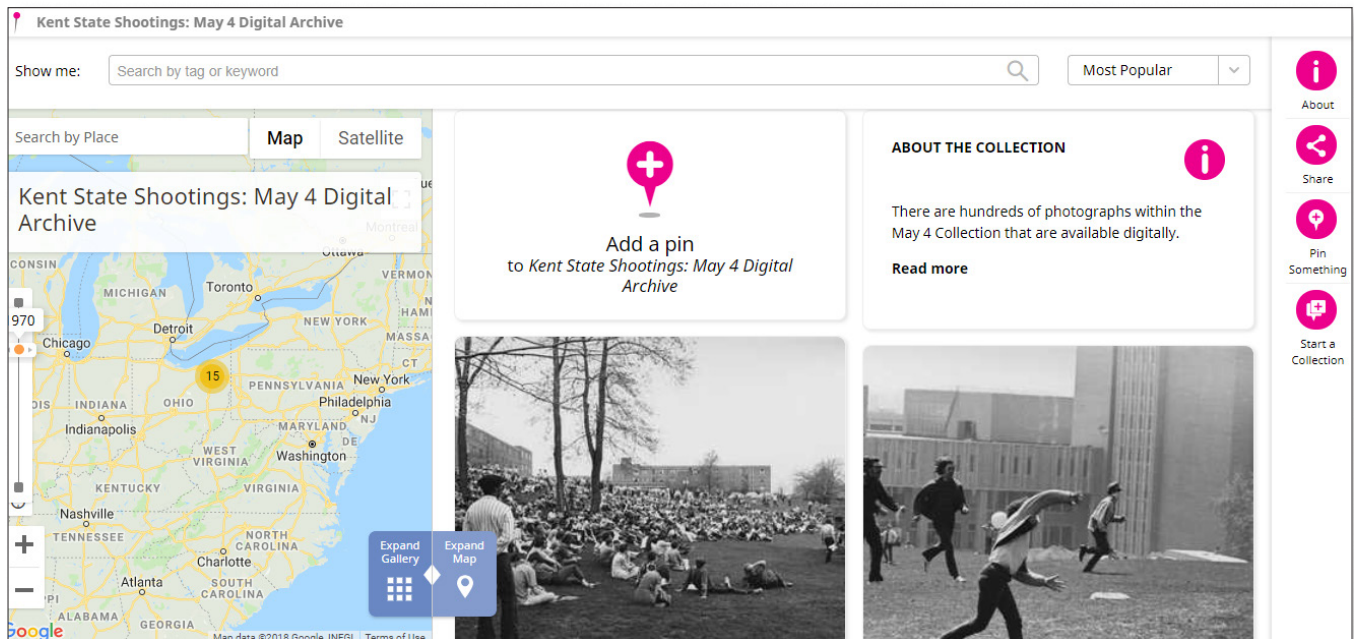
The map, <http://goo.gl/6wvPyz>, also shows the unit's routes and additional information added from Google Maps, which can be both helpful or potentially problematic. For example, Google Maps adds information about Ellis Island when a point is located there. However, this added information is clearly marked as coming from Google Maps, not from the content creators.

### Historypin

Historypin, <https://www.historypin.org>, is a user-generated archives of historical photos, videos, and audio recordings. The focus on geographic locations might lead a user to believe that Historypin, Google Maps, and Storymap are all similar products, but some key differences exist. One difference between Historypin and the others is that it collects multiple media and correlates them into one point on a centralized website. With Historypin, users do not have to host anything within their websites, and,

while they don't have to upload content via spreadsheets, there is a bulk upload option. A user can then see all of the collections on a map of the world, or narrow down to an individual user/collection/institution to see materials from that entity alone. Users retain their copyright and can even choose a Creative Commons License to inform other users about if and how the shared media can be reused. In addition to partnering with Google and using Google Maps, the site is free to use and free of advertisements.

The ever-growing content in Historypin is uploaded by a variety of users ranging from the average person with a shoebox of old photos to national libraries. In fact, there are over "3,000 cultural heritage organizations" using Historypin to enhance their collections and engage not only with their local users, but with a worldwide audience as well. Kent State University Special Collections and Archives used Historypin to create collections, including one that features materials from the Kent State shootings. Visit the May 4 Digital Archive at <https://www.historypin.org/en/kent-state-shootings-may-4-digital-archive>. Other institutions, such as the University of Wisconsin–Madison, which features campus locations, and the US National Archives use Historypin.<sup>3</sup>



May 4 Digital Archive collection in Historypin. Interact with the map at <https://www.historypin.org/en/kent-state-shootings-may-4-digital-archive>.

This is just a sampling of the tools available for data visualization. Many academic libraries and archives are becoming partners in digital humanities projects, and some offer data visualization workshops for faculty, students, and community members. Along with being a partner for researchers, archivists and librarians can leverage visualizations as a new way to engage users with special collections materials.

Notes

1. Katherine Santa Ana, “*The Archivists’ Nook: Visualizing the Archive*,” The Catholic University of America Libraries, March 16, 2017, <https://www.lib.cua.edu/wordpress/newsevents/9101>.
2. Andy Sturdevant, “Hockey, Hip-Hop and Other Green Line Highlights,” *Minneapolis Post*, June 13, 2014, <https://www.minnpost.com/stroll/2014/06/hockey-hip-hop-and-other-green-line-highlights>.
3. The University of Wisconsin–Madison Historypin account, <https://www.historypin.org/en/person/10411>; the US National Archives Historypin account, <https://www.historypin.org/en/person/23019#projects>.


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