

The Digital Drawer: A Crowd-Sourced, Curated, Digital Archive Preserving History and Memory

White Paper

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Summary

“The Digital Drawer: A Crowd-Sourced, Curated, Digital Archive Preserving History and Memory” (September 1, 2018 – August 31, 2020) was funded by a generous Level II NEH Digital Humanities Advancement Grant. The Digital Drawer partnership is a rare collaborative partnership formed to pilot a method of gathering, curating and disseminating crowd-sourced community memory. This effort of the Georgia state library system, universities, humanities and non-profit organizations is testing an online concept through a program permitting Georgians to upload their carefully preserved documents, photographs, images of artifacts and oral memories of historic churches that were the foundation of their community life. The Digital Drawer platform was developed by the Georgia Institute of Technology’s Institute for People and Technology (IPaT), in collaboration with Emory University’s Center for Digital Scholarship (ECDS) and the Historic Rural Churches of Georgia (HRCGA), is unique in that it is designed to accommodate the limited technical capacity of an anticipated older demographic with disabilities. The project has produced a new digital repository of church media and metadata, migrating the media database from HRCGA’s WordPress based website to a domain-standard Omeka-S website and developing a custom Omeka-S public contribution module for the new site.

The goal of the Digital Drawer partnership was to create a methodology for gathering, curating and disseminating these crowd-sourced collections of rural church histories, establishing a digital community memory. We intend for the Digital Drawer to eventually become an international, open-source platform to be used by humanities scholars and the general public to access collections of these historical and often lost voices in our past.

While many digital asset management (DAM) platforms and publicly accessible digital libraries exist, most have been designed for technically savvy users (to the extent that these systems were designed with the involvement of end-users) and not the older adults who are a key audience for our Digital Drawer platform. In the domain of digital humanities collections, our project is significant in that we are utilizing a *participatory design* process wherein all of the stakeholders and potential users of a system are actively involved in the design process to help ensure the result meets their needs and is usable.

Early in the design phase of the project, we engaged our target user community in a series of *participatory design* activities, including focus groups, user interface (UI) prototyping interviews and collaborative design exercises. Our findings from these activities helped inform UI design guidelines for the public-facing Digital Drawer web application that is uniquely innovative in its universal approach to accessibility, accommodating the needs of this older audience. These guidelines were then used to develop a custom public media and metadata contribution module for the open-source Omeka S digital collections web platform. The module utilizes the simplified UI design recommended by our participatory design guidelines.

Background

Religion has played an important role in forming America and from its first settlements, rural churches formed the vital core of community life in America. Many of the churches that once

functioned as centers of rural life are today physically disintegrating. As congregations disappear and church structures are abandoned, local historical memory of communities that date back to the beginnings of the European occupation of North America are also endangered. In fact, society may lose many of these records that generations before us preserved but are now at risk.

Churches are often key sites for examining several important strands in American history. In Georgia, rural churches document the settlement of the state in the wake of the forced removal of Native Americans. Churches tell stories of the state's racial history in the post-Civil War era through the long Civil Rights Movement, and they document the rise and fall of population centers as the state's political economy shifted. Church records, replete with names, dates, and descriptions of events large and small, contain information useful in understanding the state's history from the bottom up. Rural churches, scattered across often resource-poor sections of the state, are significant yet under-represented sites preserving components of this history.

Project History

Saving this important part of American history is the mission of Historic Rural Churches of Georgia (HRCGA). Historic Rural Churches of Georgia was founded in 2012 by Sonny Seals and George Hart with a mission to research, document, and ultimately preserve historic rural churches across Georgia. They initially created a pictorial archive of endangered churches and associated history around Georgia that is featured on their website, launched in 2013 (see Fig. 1). With over 50,000 followers on Facebook, over 30,000 monthly visitors to the website and a Georgia Public Television show broadcast in the Fall of 2018, HRCGA engages a large public audience interested in and involved with Georgia's historic rural churches. Visitor and follower data from HRCGA's web site and social media pages reveal that their primary demographic is older women (65+) living in rural areas of the state.



Friendship Baptist

SUMTER COUNTY | ORG 1839 | PHOTOGRAPHY BY STEVE ROBINSON

Friendship Baptist, built in 1857 and located in northwestern Sumter County, is the oldest standing church in the county. Much of the history of the church would be lost if not for the efforts of Jack F. Cox, of Americus, and Mrs. Scott Hart, of Schley County. Mrs. Hart preserved the original minutes book of Friendship Baptist and provided a transcription of it in 1981. The transcription is a treasure, transcription is a time when

Fig. 1. Church detail page from hrcga.org.

A key component of preserving these vitally important structures is collecting and disseminating information about their history. The HRCGA's Digital Drawer was conceived as a platform and editorial structure to crowd-source the collection of such documents and it has the potential to build an archive of significant historical importance while providing a model to extend such work beyond the state of Georgia. Crowd-sourcing documents also helps build community around historic structures in need of preservation, providing an extensible model for such work. The Digital Drawer platform is being designed to better serve HRCGA's identified primary demographic (elderly, female, rural).

Designing the User Experience for Older Adults

Recent survey data shows that technology adoption is steadily rising among older adults, including adults 65 and older, but this population still has lower than average technical savvy and a relatively higher incidence of disabilities, attributes that we believe should inform the design of web site and apps, especially those popular with older users.

There have been many efforts to improve the accessibility and usability of web sites and web apps, including the development of accessibility guidelines for web content and authoring tools. While utilizing such guidelines when designing web site and app is important, relying on guidelines alone to improve the accessibility of web sites and apps for older users and users with disabilities doesn't necessarily also result in better usability of those sites and apps for these users. Guidelines for designing systems for older adults often recommend simplifying the graphical UI of a web site or app, increasing the size and visual contrast of fonts and icons to increase readability, etc., but it is also important to address the ease-of-use of such web sites and apps by employing other techniques such as using a content navigation style which is more familiar to older adults. For older adult users in particular, it is often beneficial to leverage their previous experience with analog media which presents information in a linear format (i.e., books, video).

Designing the User Experience for the Digital Drawer Content Submission Plugin

In designing the user interface (what the web site controls look like and how they function) and user experience (the user's emotions and attitude about using the web site) of the Digital Drawer content submission Omeka S module, we took a user-centered design approach with an emphasis on maximizing usability for our target user demographic. We employed a *participatory design* process wherein all of the stakeholders and potential users of a system are actively involved in the design process to help ensure the result meets their needs and is usable.

As part of our *participatory design* approach, we conducted user requirements gathering activities with members of our target user demographic, expanded to include public library personnel, who could provide insights into what typical technology troubles that library patrons experience when using similar tools and how such a tool could be used by the library system.

We conducted two focus groups at the Waycross Public Library in Waycross, Georgia on Thursday May 11, 2017. The first focus group included four library personnel (3 women, 1 man) and the second group for content researchers (i.e., members of the general public who have an interest in historic rural churches, genealogy, Georgia and American history, etc.) included five participants (3 women, 2 men). Overall, participants were enthusiastic about a proposed web-based online content submission system for the facilitation of research on historic rural churches in Georgia. Library personnel made suggestions on the design and feasibility of a dedicated kiosk within a library for content submitters. Researchers described their research methods, use of and familiarity with technology, and design recommendations for the online system.

We also conducted a series of one-on-one user interface design prototyping interviews with potential users of the Digital Drawer. We constructed a series of paper prototype screen design variants of hypothetical Digital Drawer search and contribute workflows. Our prototype search and contribute workflow screens were designed to have a linear flow and to require or allow a navigation style with a minimum number of branching decisions or options.

Three older men (ranging from very low to moderate technical savvy) met individually with a Georgia Tech researcher to work through paper prototype use cases and usability requirements of a proposed content submission for the Historical Rural Churches of Georgia (HRCGA) Society. Paper prototyping consisted of proceeding through a hypothetical use case of uploading pictures and text information to an online church profile within the proposed system. The researcher asked questions regarding usability (e.g., what would you expect this button to do?), familiarity (e.g., have you uploaded photos to a website before?), acceptability (e.g., is this a process you would be interested in learning how to do?), and their expert research advice (e.g., do you have recommendations for the functioning of a system like this?). The paper prototype screens were modeled after popular content submission procedures championed by social media sites (e.g., Facebook) to leverage existing user experience and knowledge of these functions (see fig. 2).

The image shows a paper prototype of a web interface for 'Grace Church'. On the left, there is a placeholder for a photo showing three stylized figures with smiling faces standing in front of a church altar. To the right of the photo placeholder, there are several text input fields and buttons:

- A heading: "Grace Church"
- A question: "What can you tell us about this picture?"
- A prompt: "Fill out as much as you can:"
- A date field: "Date: ___ (Month) ___ (Day) , ___ (Year) ___"
- An event field: "Event/Occasion: _____"
- A people field: "People in picture: _____ (First) ___ (MI) ___ (Last)"
- A button with a plus sign and the text "Add another name"
- Navigation buttons: "Back", "Save & Edit Later", and "Next"

Fig. 2. Example paper prototype screen: Adding metadata to uploaded photo

Participatory Design Conclusions and Guidelines

Based on our participatory activities with target users, we concluded that we should use a conversational style for instructions used in the Digital Drawer content submission module (as well as throughout the rest of the web site) to make the system more intuitive and approachable for this demographic of older, less confident technology users. We also concluded that our design should guide users through the search, upload and metadata annotation process by dividing the content submission procedure into simple steps, each with only the minimum required choices and decisions. Dividing steps into separate screens also allows more of the display to be magnified and simplified making it easier for older users with possible vision impairments to operate.

Our participants were mostly familiar with how image file types work and how they need to be uploaded. However, as an example of some users' creative methods of dealing with the unnecessarily complex user interface and user experience of some web site, apps and computer operating systems, one of our participants resorted to the following process to import photos to his computer: He would take a picture with his phone and then fax the photo to his home computer's native faxing application. This participant's experience with technology served to emphasize the importance of designing clear, conversational instructions and simple, segmented user interface screens to guide our Digital Drawer users through the steps to upload and annotate media to our repository.

Findings and Deliverables

Digital Drawer Prototype Repository

Our Digital Drawer platform software architecture constitutes a content management system (CMS), including back-end server components (i.e., database) and front-end, user-facing components (i.e., public media and metadata submission web app). We originally planned on developing many of these software components ourselves. We evaluated a number of technology platforms and resources for designing the Digital Drawer software architecture and developing our own CMS and media/metadata database, but we ultimately decided to heed the advice of one of the NEH proposal review panelist's advice to consider adapting one of the existing Open Source (free for public use, including creating derivative software versions) digital collections platforms for our Digital Drawer project.

We evaluated a number of such platforms and ultimately chose to build our Digital Drawer public media and metadata submission tools for the Omeka S digital collections and publishing platform. As noted by the panelist, essentially designing yet another digital collections platform from the ground up would further fragment the pool of such projects. Also, by utilizing Omeka S as our back-end CMS platform, we could allocate more of our time and effort toward designing, developing and evaluating the user interface (UI) and user experience (UX) components of our project, ensuring the resulting tool is accessible and usable by our target user demographic. We

will also be able to contribute our results (i.e., Omeka S user contribution module) back to the Omeka community of users for use in other projects. By creating our Digital Drawer collection as an Omeka S digital collection, it will be much easier to share our collection with other digital libraries, many which also use Omeka S. In particular, we plan to migrate our current Omeka S Digital Drawer collection to an Omeka S system at the Pitts Theology Library at Emory University for permanent archival stewardship.

The Omeka S CMS provides most of our needed server and database technology requirements for the Digital Drawer project, including the database for storing submitted media and associated metadata, utilization of metadata standards (Dublin Core), linked open data standards (JSON-LD), web services application programming interface (API) and built-in data sharing capabilities. Omeka S functionality, including user interface components, is also extendable via a custom module facility which we leveraged to develop and deploy our custom media and metadata contribution module.

To date, we have instantiated and configured a dedicated web app and database server for the project at Georgia Tech, installed and configured the Omeka S CMS on this server and have designed a Dublin Core metadata schema (a standard for describing digital resources such as images, documents, audio recordings, etc.) for the Digital Drawer based on the guidelines from the Digital Public Library of America. We have also completed development of a custom Omeka S module which allows interested public contributors to submit media content (i.e., photographs, scanned documents, etc.) and annotate their submissions with metadata. Our custom Omeka S module is based on the public contributed Omeka S Collections module but is extended and modified to sequentially present requested metadata fields in small, related groups. This design conforms to the older adult usability guidelines resulting from the participatory design phases of our project (see Appendix A).

We have also developed data and database migration software tools to migrate the large, existing database of media and metadata hosted at the Historic Rural Churches website, www.hrcga.org, a WordPress site, to the new Omeka S Digital Drawer site. Using these custom migration tools, we have successfully migrated all of the existing media and metadata from the WordPress site to our new Omeka S digital collection (see Appendix B).

Conference Paper Presentation

We published and presented a paper at the 21st International Conference on Human-Computer Interaction (HCII 2019), July 26 – 31 in Orlando, Florida, discussing the participatory design process and the challenges of designing a public-facing media and metadata submission tool for our identified user population. We reported on both the participatory design process and activities as well as our initial findings and conclusions. While HCII is probably not a typical venue for presenting humanities projects or research, our participatory design process and community engagement during the design and development phases of the Digital Drawer were deemed an important contribution to HCI research and our paper was well received by fellow HCI and computer science colleagues attending the presentation.

Future Work and Collaborations

An overarching goal of the Digital Drawer project is to create a digital archive which lives well beyond the period of this project performance. To that end, we have engaged in ongoing discussions with several groups and institutions to support and manage the Digital Drawer collection long term. We are working on putting together collaborations with: The Digital Integrative Liberal Arts Center (DILAC) at Georgia Tech, the Center for Digital Scholarship at Emory (ECDS), the Pitts Theology Library in the Candler School at Emory and the Georgia State Library System.

We have also recently engaged in discussions to collaborate with Dr. Danielle Willkens, Georgia Tech School of Architecture on an effort to use data and sensing technologies, including unmanned aerial vehicles (UAV) to 3-D scan and archive the physical structure of churches in the Digital Drawer portfolio. Toward our new collaboration with Dr. Danielle Willkens, we have applied for a small, \$75K seed grant to build a proof-of-concept mobile app allowing users to contribute content and metadata (i.e., “likes”, opinions about the importance of sites and structures, stories, geo-referenced photos and media, etc.) about historic sites and structures when they are physically visiting these sites. We plan to utilize augmented reality and virtual reality (AR, VR) technologies to both allow users to visualize collected data and to contribute data of their own. This app will complement the Digital Drawer public web app’s more traditional crowd-sourced media/metadata ingest tool and allow users to contribute content while physically visiting a church site, for example, while making a tour of churches on our proposed Historic Rural Church Trail. We have also applied for a second Georgia Tech seed grant program with Dr. Willkens to develop an agenda for investigation around historic building information modeling (BIM) using large-scale architectural site scanning (LIDAR and photogrammetry-based UAV scanning). We have proposed a pilot research project to document rural church sites tied to the civil rights movement.

The project to create the Digital Drawer has seen three phases: conceptual design, participatory design of the user interface, and prototype development. To complete Phase Four of the project, which we are now well positioned to do, we have recently applied for Level III funding from NEH to support deployment of the prototype, testing and revision of interface and function, and implementation of the module to collect user submissions related to historic rural churches in Georgia. Phase Four will be led by the Pitts Theology at Emory University and the Pitts Library has agreed to become the permanent home of the Digital Drawer collection.

The Georgia Tech team also has a future goal of conducting usability testing of the Digital Drawer public media and metadata contribution Omeka S module. Specifically, we wish to test the usability and user experience for older adults of our simplified, segmented linear series of screens against the standard, monolithic design of the original Omeka S Collections module from which our custom module was derived.

Appendix A. Custom Omeka S Collections module showing first two metadata upload screens

Historic Rural Churches of Georgia Digital Drawer

Browse **Welcome to the Digital Drawer**



The *Digital Drawer*: A Crowd-Sourced, Curated, Digital Archive Preserving History and Memory

If you would like to contribute to our public collection of materials, history and stories about Georgia's historic, rural churches, please use the tool below to upload and describe your photos, scanned documents, video and audio recordings, etc. about a rural church in Georgia.

Picture or Photograph

screen1

Please upload your photo.

Briefly tell us what this photo shows.

What can you tell us about this picture? Tell us as much as you can.



Choose File mt-airy-union8.jpg

I want to submit anonymously

Email me my submission

I accept the [Terms of Service](#) ✖

Historic Rural Churches of Georgia Digital Drawer

Browse [Welcome to the Digital Drawer](#)

Search

The *Digital Drawer*: A Crowd-Sourced, Curated, Digital Archive Preserving History and Memory

If you would like to contribute to our public collection of materials, history and stories about Georgia's historic, rural churches, please use the tool below to upload and describe your photos, scanned documents, video and audio recordings, etc. about a rural church in Georgia.

Picture or Photograph

screen2



Do you know when this photo taken? If so, please enter a date or date range like 1962 or 1920-1925

2018

Is this a photo of an event, special occasion, etc.? If, so tell us what the event or occasion was.

[Previous](#)

[Next](#)

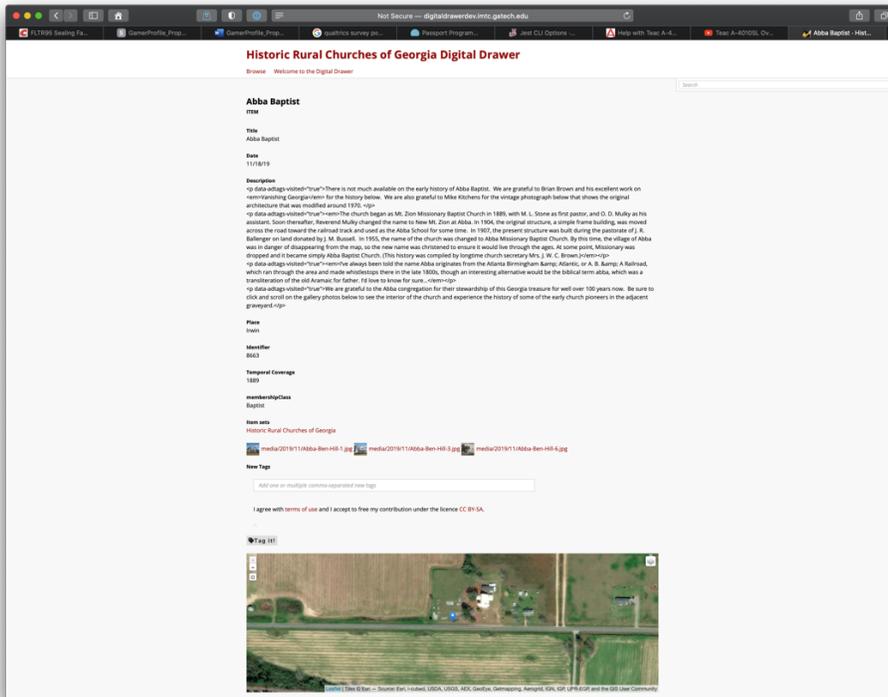
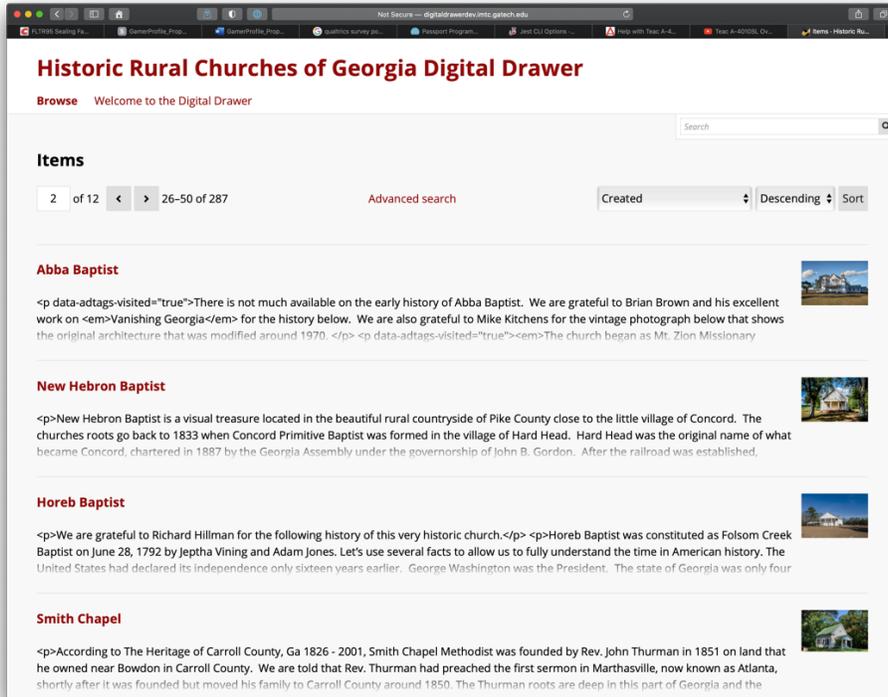
I want to submit anonymously

Email me my submission

I accept the [Terms of Service](#) ✖

[Submit](#)

Appendix B. Omeka S database of church media and metadata migrated from hrcga.org WordPress site



Not Secure — digitaldrawer.mtc.gatech.edu

Historic Rural Churches of Georgia Digital Drawer

Browse Welcome to the Digital Drawer

media/2020/10/mt-airy-union7.jpg

MEDIA



Who took this photo?
Tom Reed

When was this church built?
NA

County
Union

Identifier
11941

Short Title
mt-airy-union7

Denomination
Baptist

New Tags

Add one or multiple comma-separated new tags

I agree with [terms of use](#) and I accept to free my contribution under the licence [CC BY-SA](#).