6-22-2018

# Tweeting Tennessee's Collections: Where Bots & Special Collections Meet

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# Tweeting Tennessee's Collections

## Where Bots & Special Collections Meet

## Introduction

This project demonstrates how a Twitterbot can be used as an inclusive outreach initiative that breaks down the barriers between the Web and the reading room to share materials like postcards, music manuscripts, photographs, and cartoons with the public. Once in place, Twitterbots allow our physical materials to converge with the technical and social space of the Web. Twitterbots are ideal for busy professionals because they allow librarians to make meaningful impressions on users without requiring a large time investment. This poster covers my recent implementation of a digital collections bot (@UTKDigCollBot) at the University of Tennessee, Knoxville, and provides documentation and advice on how you might develop a bot to highlight materials at your own institution.

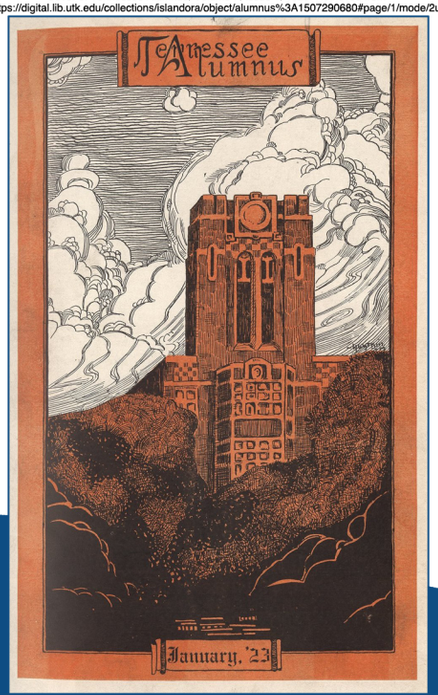
Anna Catherine Wiley, Bookplate design. Retrieved from https://digital.lib.utk.edu/collections/islandora/object/acwiley%3A397


## References

1. http://www.scottcarlson.info/you-should-make-a-twitter-bot/
2. Set up developer access: https://apps.twitter.com/
3. http://ogp.me/
4. https://cards-dev.twitter.com/validator
5. https://github.com/Islandora-Labs/islandora_social_metatags
6. https://www.openarchives.org/pmh/
7. https://pro.dp.la/developers/api-basics/
8. https://devcenter.heroku.com/articles/clock-processes-python
9. https://aws.amazon.com/lambda/
10. https://analytics.twitter.com

Thanks to Mark Baggett for his help with this project.

Cover of Tennessee Alumnus, Volume 7, Issue 1, 1923. Retrieved from https://digital.lib.utk.edu/collections/islandora/object/alumnus%3A1507290680#page/1/mode/2up




## Review

A number of individuals have written helpful instructions on different methods for creating Twitterbots. I particularly benefitted from reading Scott Carlson's "You Should Make a Twitter Bot for Your G/L/A/M's Digital Collection(s)."[1] I initially had the idea to create a bot thanks to Jeanette Sewell's presentation "The Wonderful World of Bots" given for an online Amigos Library Services conference. Other informational resources on bots include:

1. http://cheapbotsdonequick.com
2. http://www.zachwhalen.net/posts/how-to-make-a-twitter-bot-with-google-spreadsheets-version-04/
3. http://programminghistorian.github.io/ph-submissions/lessons/intro-to-twitterbots
4. https://botwiki.org/resources/twitterbots/

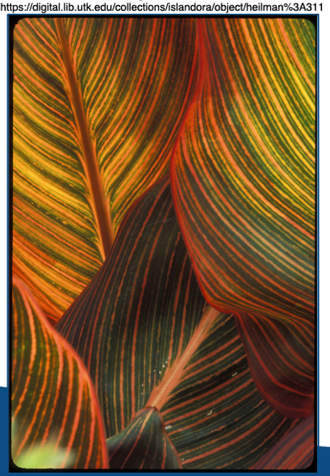
You can also explore other Twitterbots that have been implemented to get more ideas. Some of my favorite bots include: @NYPLEmoji, @TateBot, @DPLAbot, @WaltersBot, @MADMuseumBot, and @VAMuseumBot.

## Method

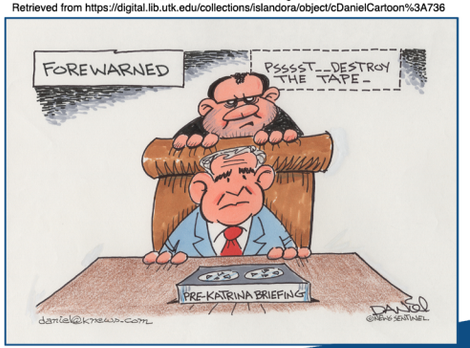
To make UTK's digital collections bot, I began by creating a new Twitter account and activatong developer access for it on the Twitter apps website.[2] Within Twitter apps, you can retrieve all of the codes needed to interact with Twitter's API (Consumer Key, Consumer Secret, Access Token, and Access Token Secret). I used PyCharm as my IDE for Python and Heroku for hosting. If you are interested in a less technical solution for a Twitterbot at your institution, review some of the methods presented in the section above. Tracery and Google sheets are some options you can consider.

In order for you to be successful, it is critical that certain technologies have been implemented for your digital collections. First and foremost, Open Graph[3] tags must be present in the metadata online for each record page in order for an image to appear when you tweet a link. To check and see if you have Open Graph tags, simply go to "View Page Source" or test a link to a digital object in Twitter's card validator.[4] When first beginning this project, open graph tags were not present in UTK's Islandora records. Our Digital Initiatives department helped add these tags using Islandora's Social Metatags module.[5]

Alan Heilman, "Canna generalis", 0150, Retrieved from https://digital.lib.utk.edu/collections/islandora/object/heilman%3A311



Charlie Daniel, "Pre-Katrina briefing", 2005?, Retrieved from https://digital.lib.utk.edu/collections/islandora/object/cDanielCartoon%3A736




Another technology that I relied heavily upon is the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH).[6] In order to avoid having to manually add links and titles, you should find an automated way of generating this information. For institutions that contribute to the Digital Public Library of America (DPLA), the organization's API[7] is a great alternative to OAI-PMH. Visit @dpl_eh (a Canadian Twitterbot) to see how this can be executed.

## Challenges

While there is significant documentation in existence to help guide the creation of bots, several issues arose in my work that required unique solutions.

In initially testing the bot, I found that some of the images I shared on Twitter were appearing grainy when posted. By looking at the files themselves through going to the webpage and opening "View Page Source", I discovered that these images were thumbnails rather than full jpegs. By looking through the collections affected by this issue, I quickly discovered that this was due to the Islandora content model selected for each collection. Collections using Islandora's compound or book models had thumbnails present in their open graph tags while collections using the large image content model supported high quality image sharing. To address this, I altered my program so that it only selected random images from particular collections, which corresponds with OAI sets.

The most challenging aspect of this project was figuring out how to host the bot so that it was truly automated and did not require any intervention. A simple method is to run your program on a computer that is always on, but posts may be interrupted due to computer maintenance. Rather than relying on a spare computer or using library server space, I used Heroku, a free cloud application program, to run my Python program. Running a program periodically can be achieved in Heroku by using either apscheduler or the Heroku scheduler add-on.[8] Heroku scheduler allows you to run jobs at pre-established intervals while apscheduler is more customized and allows you to specify any time or frequency for your job. While more complex than necessary for my needs, I am running UTK's digital collections bot using apscheduler so that it is more flexible in the future. Another method for hosting you can explore is Amazon Web Services (AWS) Lambda.[9]

## Future Directions

My main objective with this project was to get the Twitter bot running and fully automated, but there are several avenues for additional work in the future, particularly in terms of increasing engagement. Marketing and promotion by the libraries is not yet underway. It is hoped that retweets and an announcement will increase the number of followers and likes. Once the bot has been operational for an extended period, I hope to further analyze engagement through using Twitter's analytics.[10] Currently the bot has 18 followers and has gathered five likes and two retweets. Analytics report that the bot made 988 impressions in the first thirteen days of June. In the future I plan to test out different tweeting frequencies and research ways to make our bot more interactive, or communicative, rather than instrumental by going beyond simple automated tweets.

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GitHub: https://github.com/mlhale7/UTKDigCollBot
Twitterbot: @UTKDigCollBot

Visit UTK's digital collections at: https://digital.lib.utk.edu/index.php