Illustration 3: A typical record in *DEEP*, displaying a date for the first edition of *The Changeling* (London, [1652]; Wing M1980) as "1653."

Gruzd, Anatoliy, project lead.
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Toronto: Social Media Lab, Ryerson University, 2006. Accessed 24 January 2018. netlytic.org/.

Introduction

Developed by the Social Media Lab (socialmedialab.ca) at Ryerson University, Netlytic (netlytic.org) is a cloud-based text and social network analyzer that aims to help uncover social networks from online conversations. Netlytic has the ability to import data from a number of sources—including Twitter, Facebook, YouTube, Instagram, text files, RSS feeds, and cloud storage—and advocates for ease of use as it requires no programming skills. However, Netlytic does require some underlying knowledge about the structure of the data you

are working with. All in all, I found Netlytic to excel at carrying out exploratory analysis. In my opinion, more focused and descriptive analysis would require a different set of more specialized tools. Netlytic integrates a data harvester with a streamlined user interface. The result: ease of use and convenience.

Batteries included

Getting started with Netlytic is a straightforward process that can be summarized in two steps: first, you create a free account; second, you import the data you want to analyze. A free account is perfectly suited as a starting point, as it allows you to work with three reasonably sized datasets (account upgrades are available, but their use falls outside the scope of this review). Mining Twitter and Instagram streams requires you to provide and link your credentials—which is expected given the access quota that these services set on their APIs. Similarly, mining Facebook will only import data from public pages. Figure 1 shows a screenshot of the user interface for managing datasets.
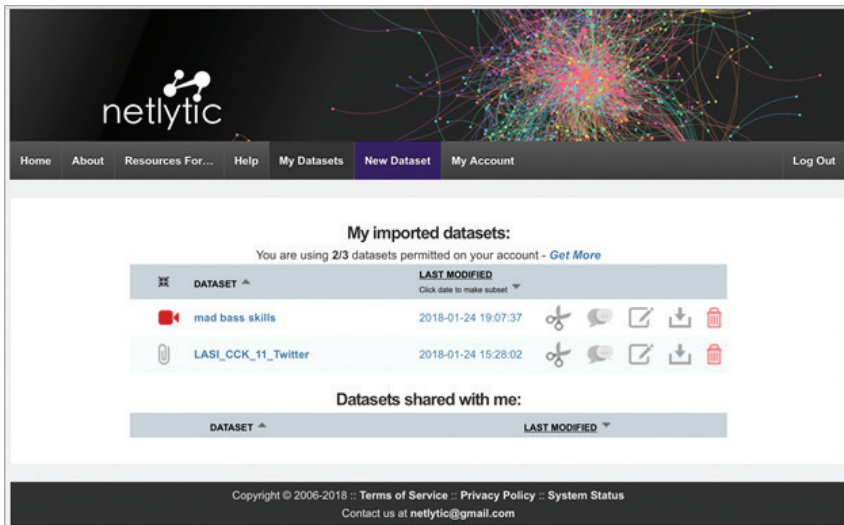

Figure 1: Screenshot of Netlytic's user interface for managing datasets.

Ingesting the actual data is the part where the beauty and practicality of Netlytic come into play: the framework does all the data harvesting and parsing for you. This is one of the framework's major strengths, as it manages to streamline a very problematic and cumbersome process into a couple of mouse clicks. This ease of use is heightened by the well-designed and documented user interface. The Social Media Lab has put a lot of effort into creating a workflow that is very intuitive to its users. These efforts have paid off.

Once your dataset has been ingested (which can take a few minutes depending on its size), you can start the analysis process by extracting keywords and categories. Keywords are visualized in a word cloud that provides hints about their frequency and potential relevance. Figure 2 shows an example of a word cloud extracted from the comments associated with a YouTube video. The fact that stop words are automatically removed is an added bonus (I did not test this in multiple languages). I did experience a hiccup in my workflow when visualizing the categories, as the framework requires Adobe Flash. Although Flash was previously a dominant platform for online multimedia content, it has been phased out as the World Wide Web Consortium encourages the transition towards HTML5. Flash Player has been deprecated and has an official end-of-life by 2020 (theblog.adobe.com/adobe-flash-update/). The software backend that provides the visualization for the categories is in need of an update.

Netlytic's forte is analyzing and visualizing networks from a data stream, and this is where this tool excels. The visualizations are produced (as before) using a couple of mouse clicks. The visualizations are interactive and can be further modified using different filters: layout, node size, and colours can be specified as parameters. The interface has the option to modify clusters and to annotate and export the resulting images. The visualizations produced are more than adequate for exploratory purposes. Figure 3 shows a network visualization generated from the analysis of a Twitter stream. The framework also has the functionality to analyze replies, perform geotagging, and carry out basic text analysis—a set of features that act as an added bonus. Having said that, software packages do exist that produce more polished and interactive visualizations. In my opinion, the integration of a data harvester with a streamlined user interface is what sets Netlytic apart from other solutions that require additional programming—resulting in ease of use and convenience.

Figure 2: Word cloud extracted from the comments associated with a YouTube video.
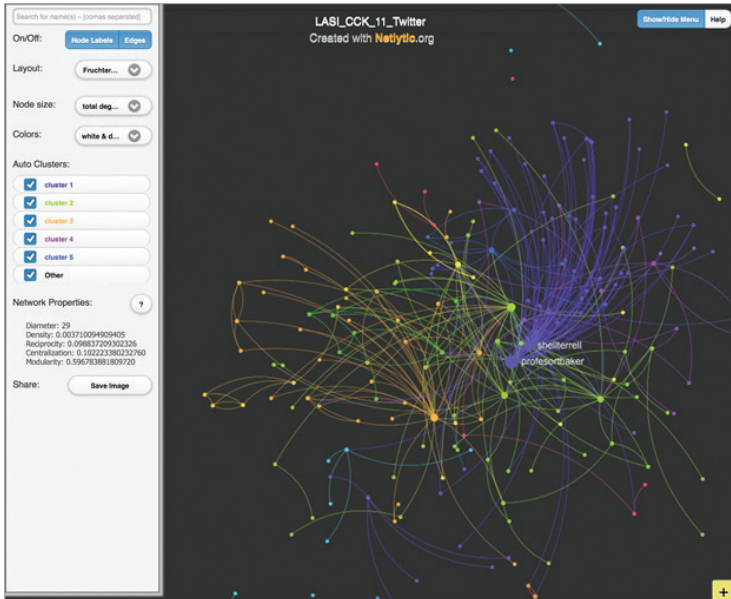

Figure 3: Network visualization generated from the analysis of a Twitter stream.

Discussion

Netlytic as a framework can be very useful for carrying out scholarly work; it can be very effective for answering research questions without having to develop the functionality to harvest and dissect a dataset from scratch. For example, in early modern studies, a scholar could use Netlytic to create a network graph of the Twitter conversations linked to the online performance of Romeo and Juliet by Such Tweet Sorrow (@Such_Tweet), analyze the impact of public Facebook interactions during a live event (e.g., Greater Victoria Shakespeare Festival @VicShakespeare), or generate word clouds from posts and media linked to a specific Instagram account (e.g., Shakespeare Theatre Company @shakespeareindc). Dissecting a dataset captured from Twitter is a matter of selecting it and choosing between options to generate text analysis, network graphs, and an overall report. I found the report option very useful as it provides an overview that can reveal some hidden aspects of the dataset and its documents. The utility of the available options and presets—along with their ease of use—defines the functionality of Netlytic as a tool. In my opinion, the options Netlytic provides are more than sufficient for exploratory analysis and can be adjusted to some extent. Along these lines, I found Netlytic to be similar to Voyant (voyant-tools.org) in that they are both web-based environments devised for the analysis of corpora; however, their individual scopes are different (digital texts and social networks, respectively). Also, datasets in Netlytic can be stored and reanalyzed at a later time.

Developing a small custom solution, a common practice in research scenarios, is expensive in terms of time and resources. Netlytic succeeds in removing this entry barrier to some extent. I must also point out that Netlytic does require user credentials to harvest the datasets in some services. Some users might not be comfortable with sharing their credentials on a third-party service—which can introduce some issues concerning privacy. On the other hand, more complex research questions will exhaust Netlytic's functionality and demand the use of specialized software packages. However, creating a platform that will fit all possible research scenarios is an impossible task.

Netlytic does have an option for exporting datasets and visualizations, which could be useful in cases where further exploration is necessary. It was gratifying to find that the export options include open and standardized formats such as CSVs and PNGs, although XML would have been a very

welcome addition. The fact that it is possible to move files into a different environment does bring the possibility of carrying out the analysis in several steps using different platforms—something that Social Media Lab clearly did not intend or encourage as the main use of its platform, since an import option is not available for parsed datasets. The one thing that I was left wondering about is if there were plans to include more robust options for automatic clustering, such as topic modelling. However, the overhead and computational expense incurred when modelling complex networks of online conversations could bring additional complications. In this sense, Social Media Lab has been practical in setting the fine line on what its tool aims to accomplish, which is not an easy thing to do.

Netlytic is a well-designed framework that succeeds in the extraction and analysis of social networks from online conversations. The framework encourages researchers to hit the ground running and skip the inconveniences and difficulties that parsing a dataset can bring. On top of that, the interfaces are well designed and its processes well documented. I found that Netlytic is an excellent addition to the ever-expanding digital humanities toolbox.

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MacLean, Sally-Beth, gen. ed.
REED Online. **Database.**
Toronto: University of Toronto, 2017–18. Accessed 23 October 2018. ereed.library.utoronto.ca.

Records of Early English Drama (REED) is a research project that, since 1979, has been finding, transcribing, and publishing historical documents that help to establish the context from which drama in England grew from the Middle Ages until 1642, when the Puritan-dominated Long Parliament closed the theatres in London. REED collaborators have been searching for any activity related to "drama, secular music, and other communal entertainment and ceremony"[1] mentioned or implied in documents, mostly manuscripts,

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1. Home page of the project's website, *Records of Early English Drama*, University of Toronto, accessed 17 October 2018, reed.utoronto.ca.