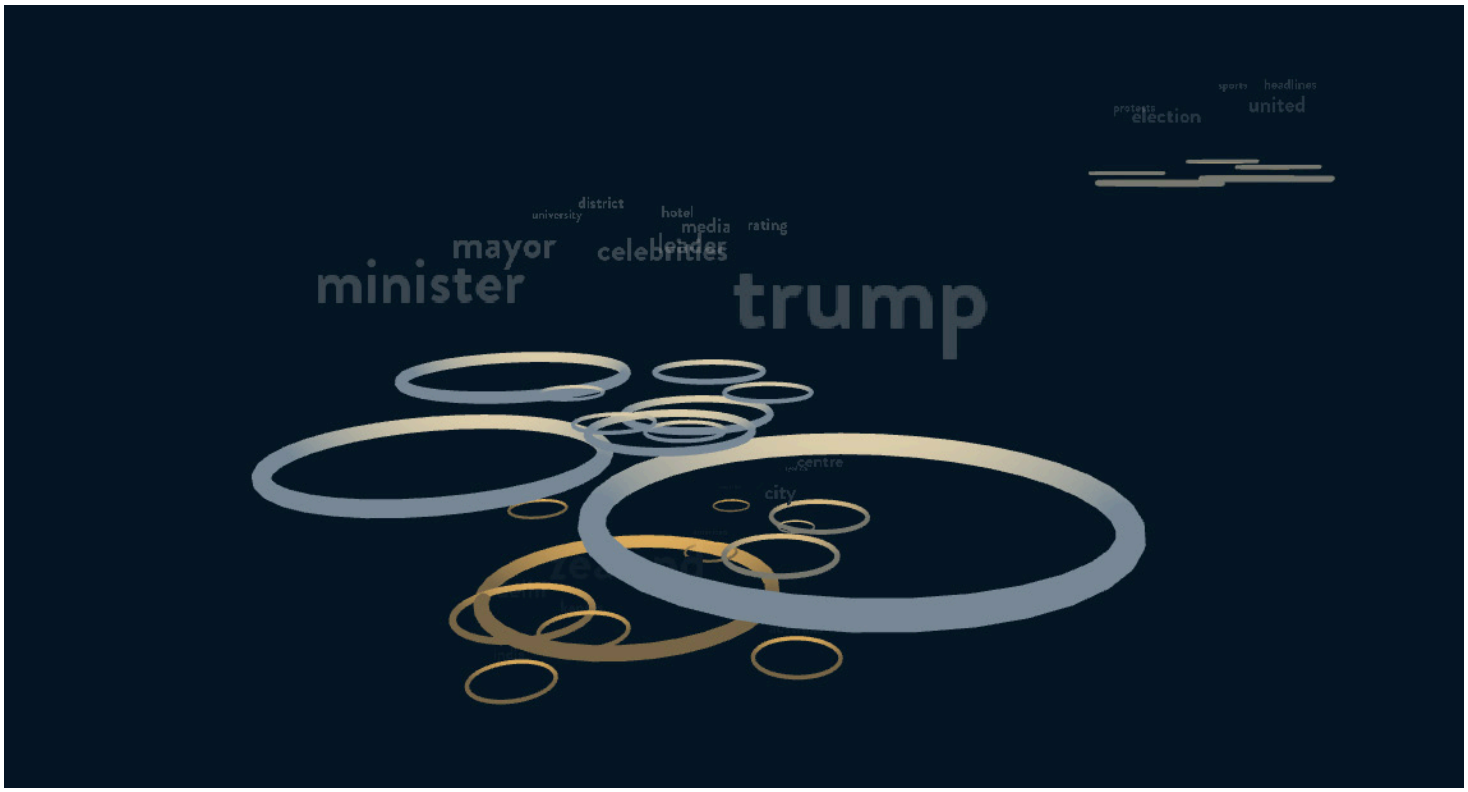
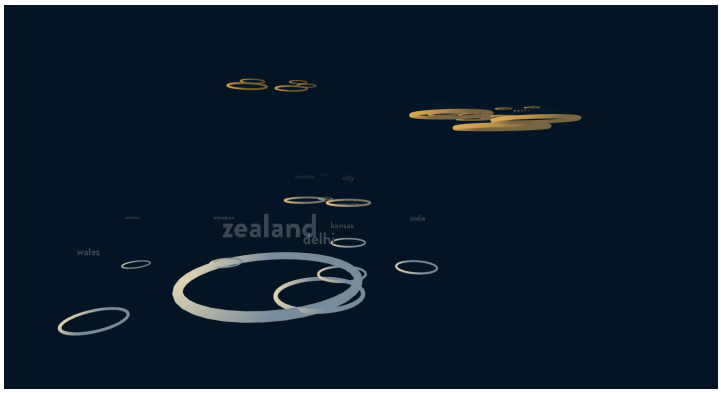
a visualization of
New York City's digital footprint

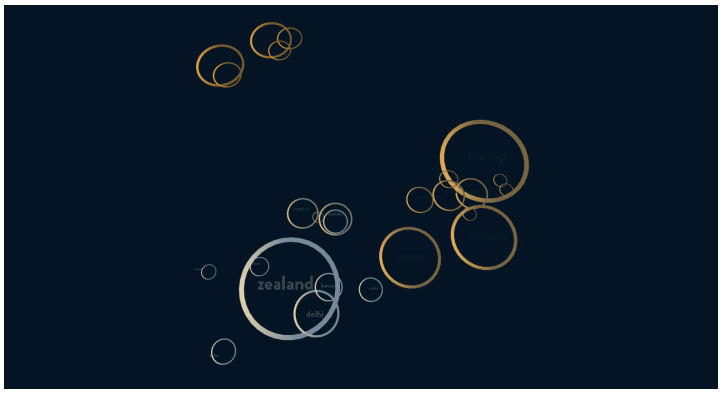
Project Description

Mapping some of the most frequently mentioned words in digital news articles related to New York City from November 8th to 11th of 2019, I see this project as a snapshot of New York City's digital footprint during the three day period. I wanted to use this project as a chance to not only visualize New York City's digital footprint, but to also capture the short-lived nature of this data: news reporting's triviality as well as their importance in providing digital windows to view and understand certain aspects of a city. Like the news reports, my visuals are meant to feel temporary, hard to grasp and constantly changing.

Viewers can interact with the visuals by using a remote to rotate the camera around the rings. During rotation, when the camera is in front of a cluster of rings, text from that cluster emerge and the color and brightness of the rings change.





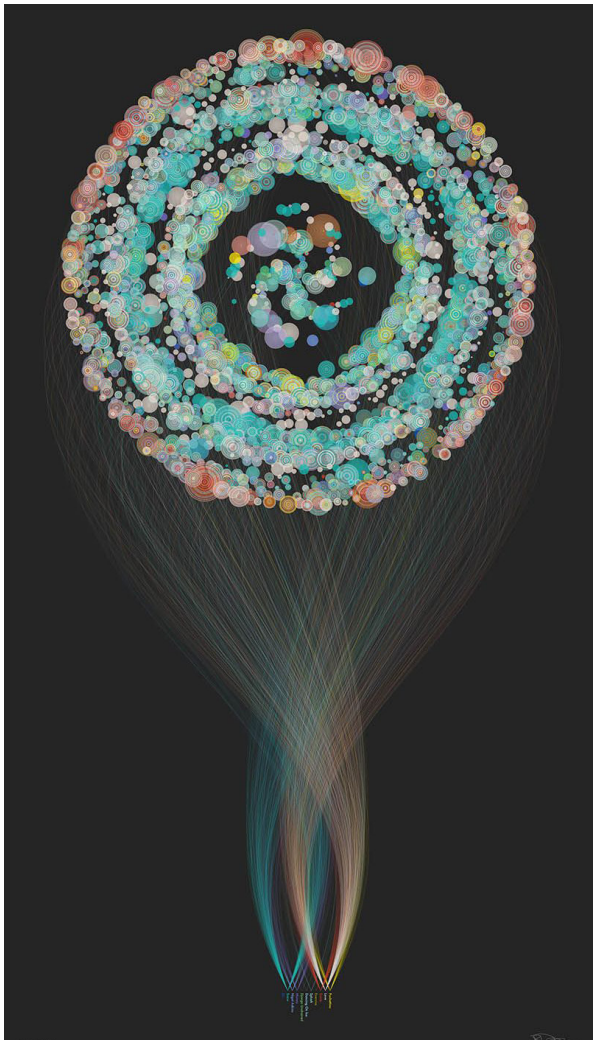


Project Images

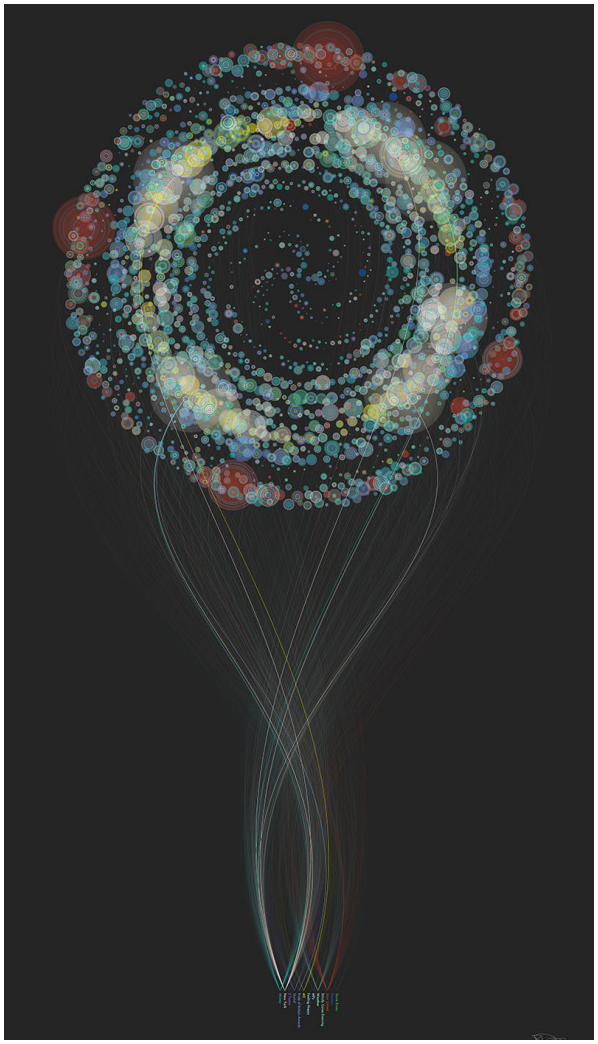
Inspiration

This project originated from an interest in experimenting with coding and data visualization and how interactions can make data more engaging. The main inspiration for my project is Branden Dawe's work: EE Digital City Portraits, in which he mapped different cities' most talked about topics on social media over a three day period to "paint a digital portrait" of each city. The resulting images are beautiful, but I was most intrigued by their abilities to capture the differences in each city, just like how portraits of each individual is unique. However, in my opinion, social media topics are short-lived and these images do not reflect the ephemeral nature of social media conversations. I wanted to change that in my design.

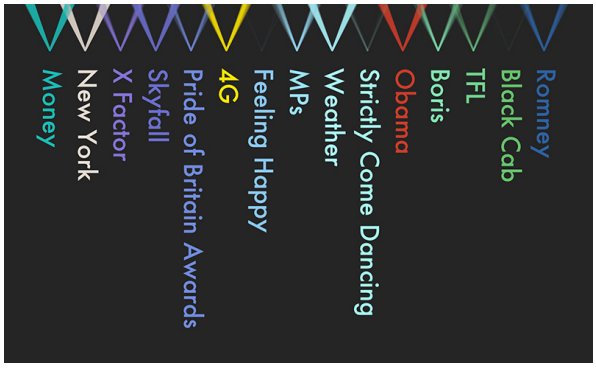
Images source: http://www.brendandawes.com/projects/ee



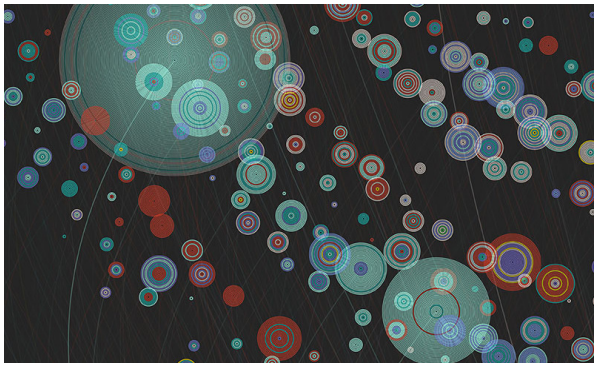
Branden Dawe, EE Digital City Portraits: Southampton



Branden Dawe, EE Digital City Portraits: Manchester



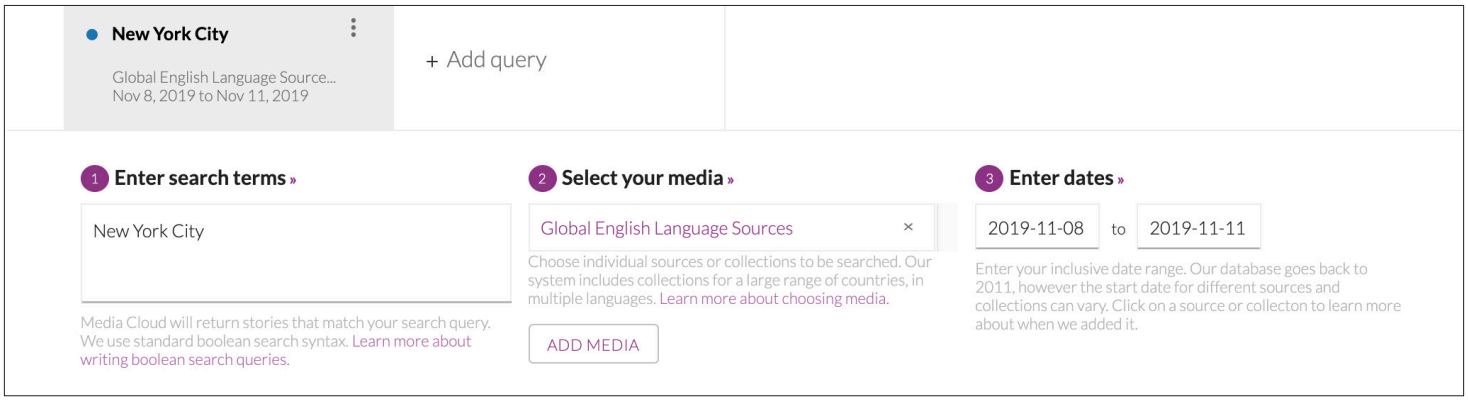
Branden Dawe, EE Digital City Portraits, details



Branden Dawe, EE Digital City Portraits, details

My Process

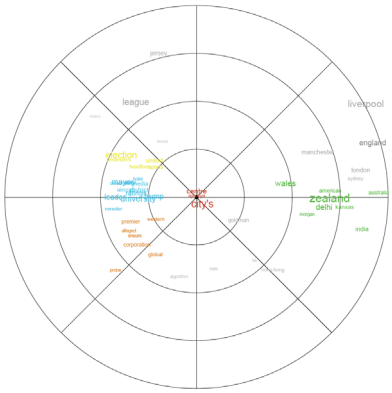
I started my project by searching online for different publicly available datasets on cities that I have lived in recently. I eventually landed on Media Cloud, an open source media analysis platform that compiles digital news reports on any input word(s) and returns a list of the most frequently mentioned words in relation to the input word(s). My input words were “New York City” and the source I selected, Global English Language Sources, contains over 1,500 media sites.



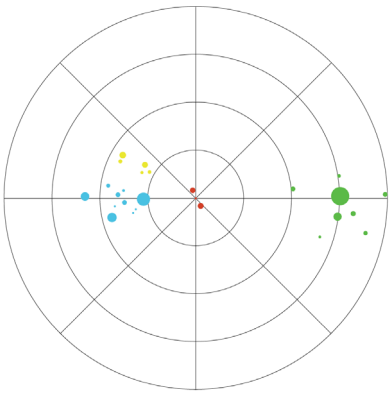
screen capture from https://mediacloud.org/

As outputs, Media Cloud generated a spreadsheet and an SVG diagram with words that are frequently mentioned in articles that talk about ‘New York City’. In the diagram, words that appear in similar contexts are mapped near each other. Then, opening the SVG file with Adobe Illustrator, I coloured words that are near one another with the same colour to emphasize the clustering. Lastly, I drew a circle for each word, keeping the same position of the word as the diagram. Radius of the circles correspond to the number of times they appeared. For instance, larger circle represent more frequently mentioned words.

word map generated by MediaCloud



words that are closeby are clustered with the same color



words are turned into circles with the same size and position

My Process (continued)

Then I recorded the x, y positions of each circle from Illustrator as (x original, y original) and used (x relative, y relative) to calculate the positions of each ring relative to each other. This way, I can map the exact location of each ring and each cluster of rings. The 'count' column represents the number of times the words are mentioned in the media and I used this data for the size of my rings.

	A	B	C	D	E	G	H
1	**term**	**stem**	**count**	**x original**	**y original**	**x relative**	**y relative**
2	zealand	zealand	47	1049	550	0	0
3	trump	trump	34	536	558	0	0
4	mexico	mexico	28				
5	minister	minist	24	454	606	82	-48
6	mayor	mayor	22	384	551	152	7
7	liverpool	liverpool	22				
8	delhi	delhi	21	1043	604	6	-54
9	league	leagu	20				
10	manchester	manchest	17				
11	election	elect	17	482	443	0	0
12	bloomberg	bloomberg	17				
13	united	unit	15	540	469	-58	-26
14	launch	launch	15				
15	city's	citi	15	686	576	0	0
16	premier	premier	14				
17	photo	photo	14				
18	centre	centr	14	665	535	21	41
19	kansas	kansa	13	1083	596	-34	-46
20	democratic	democrat	13				
21	leader	leader	12	470	547	66	11
22	fires	fire	12				

Excel file that records the position of each word

I went through the following process to achieve my visuals with code (refer to code for specific steps):

1. Compiled the size and position data into different arrays;
2. Imported 3D models of a ring and a plane that each loop through the arrays to assign them with the same size and position data;
3. Each word was made into a PNG image and applied onto the planes as textures;
4. Added a remote to control the movement of the camera so that it can rotate around the objects;
5. Imported an external tool to determine when the camera is facing a cluster of ring. When the cluster is in front of the camera, text appears and the rings change color.

Due to time limitations, I couldn't explore all the possibilities I thought of for this project. Here are some of my future steps:

1. Figure out how to automatically import data from Media Cloud instead of adding arrays manually.
2. Make visuals for multiple cities and have a collection of digital footprints. The contrast between the multiple cities can provide more insight and connections into the presented information.
3. Explore other ways to make more dynamic interactions to further enhance the ephemeral nature of data from media.